THE BUILDER

VOL. CII.—No. 3605. MARCH 8, 1912.

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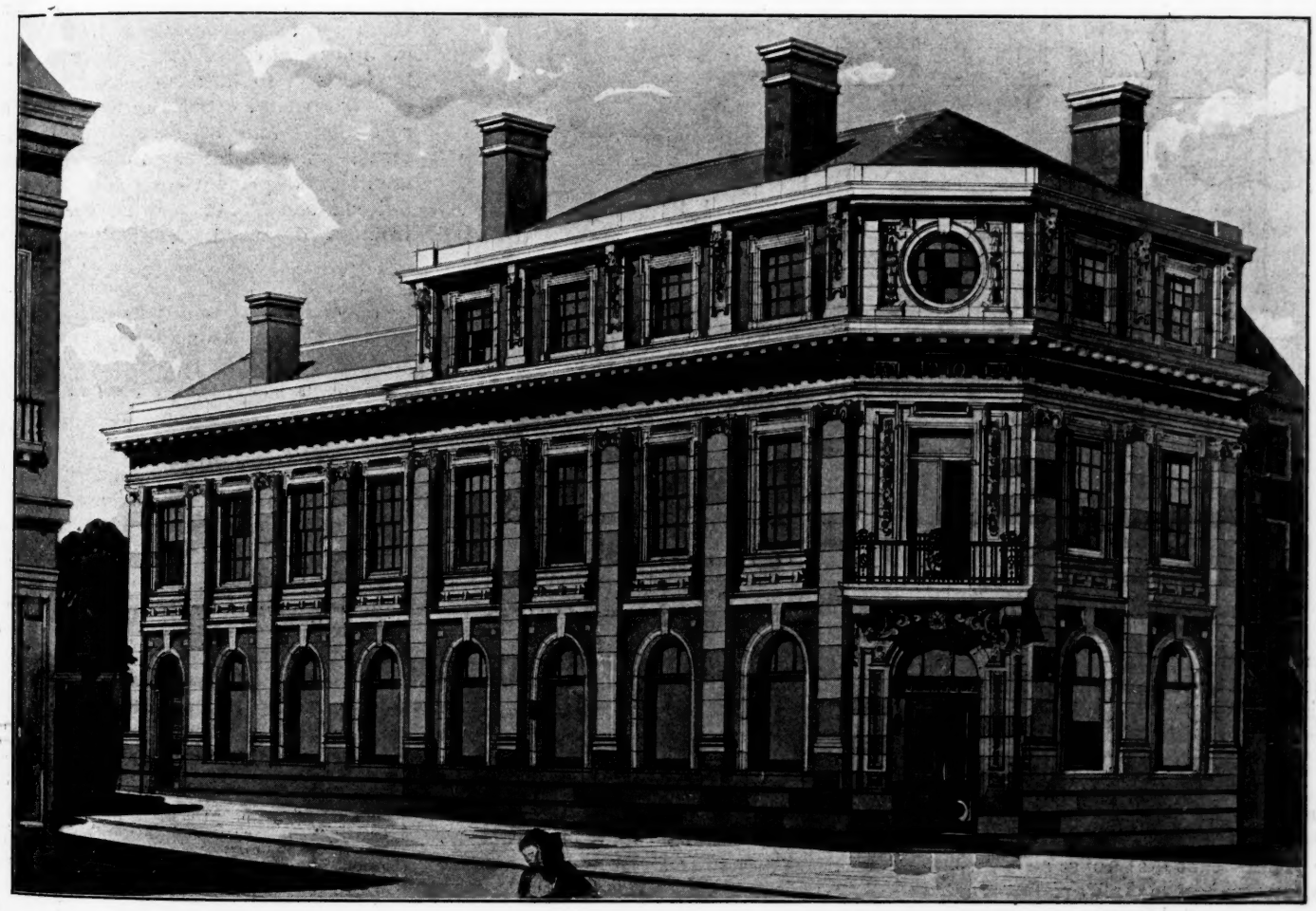


Premises at West Ealing for the London County and Westminster Bank.

Messrs. Hall-Jones and Erskine S. Cummings, A.R.I.B.A., Architects.

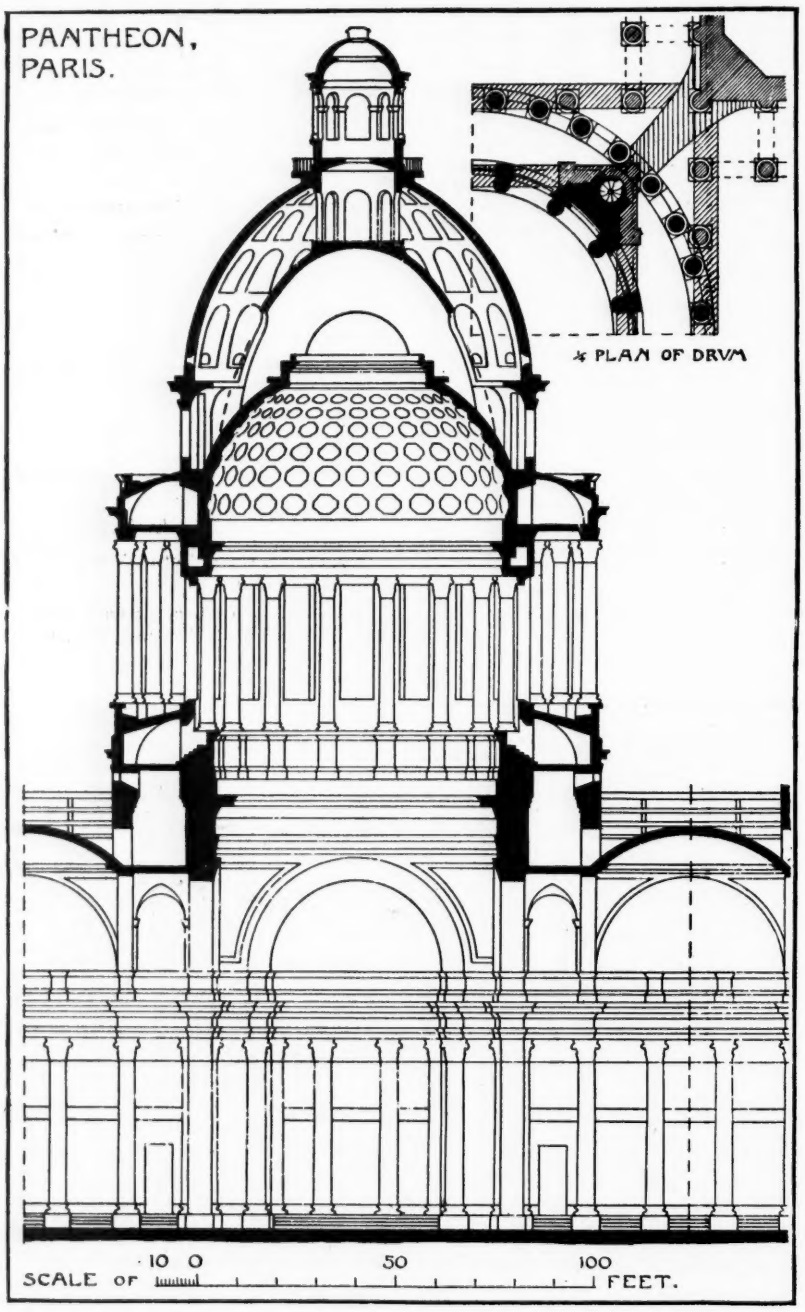
[This building, the design for which was exhibited in last year's Academy, is in course of erection. It is faced externally with Fareham red bricks with Portland stone dressings, the base being of Aberdeen grey granite. Internally the walls of the banking hall and the manager's room are panelled to a height of 9 ft. 6 in. The ceiling is modelled in fibrous plaster, and the floor of public space is executed in marble. The general contractor is Mr. Walter Dickens, of Ealing.]

HOSPITAL COMPETITIONS.

WHEN a responsible journal such as the *Hospital*, representing, we presume, the opinion of hospital administrators, makes such remarks on the conduct of hospital competitions as we quote in another column its deliberate opinion can hardly be ignored by those responsible for the present method of conducting them.

We entirely agree with the *Hospital* that the question is a very grave one, for in no class of building perhaps is it so absolutely vital to the health of the nation that the best talent in the architectural profession should be at its service. From the professional point of view the question is hardly less grave, for it is of the first importance that the method of conducting public competitions should be such as to inspire confidence in the public that this object has been attained.

We are not for the moment concerned with the criticism of the Hastings competition, put forward by the *Hospital* as the latest illustration of its remarks, neither are we concerned to defend the present system of appointing a single assessor for public competitions. It is a system that, as far as we know, does not generally obtain in any other civilised country, is, we think, condemned in this one by a majority of the more enlightened among the architects, is admitted by the Institute to be unsatisfactory in large competitions, is not adopted by it in its



(From Professor Simpson's "A History of Architectural Development." Longmans & Co.)

own students' competitions, yet is still sanctioned by it in all others for reasons which, we suppose, are satisfactory, at any rate, to itself.

But although we may not be altogether satisfied with the present system of assessing either hospital or any other class of competition, and are inclined to the opinion that if a proper application of the jury system had always been in force any such mistakes as are here alleged would be less likely to occur, we see no reason to anticipate any startling improvement from the proposal put forward by the *Hospital* that a "competent hospital expert" should be associated with the assessor. We are aware that in France and other countries where the jury system obtains it is customary to include one or more hospital administrators or medical men, and that the system is said to work satisfactorily, but that is not the same thing as associating a hospital expert with a single hospital architect. If, however, a jury on which hospital managers were represented would inspire more public confidence in the award, that alone would be an argument in its favour.

Although something is to be said for our contemporary's proposal, there is little to be said for the reasons it gives for it. A modern hospital, like other buildings of a technical nature, may be many-sided; but to say that no architect by himself has the knowledge to enable him to judge it as regards its administration and requirements is to make a statement that, whichever way it is read, needs some thing more than mere assertion. If it is meant as a general statement that no architect can ever have this knowledge it is manifestly absurd, as without such knowledge no one could design either a hospital or anything else; but if it means that as a matter of fact none of the architects who at the present moment are designing hospitals happen to possess this knowledge it is a statement which we hope, and we venture to believe, in no way represents the facts. In either event we presume that the "Fellow of the Royal Institute of British Architects of great experience and position" in whose knowledge the *Hospital* itself had sufficient confidence to ask him to examine and report on the Hastings designs is the exception that proves the rule.

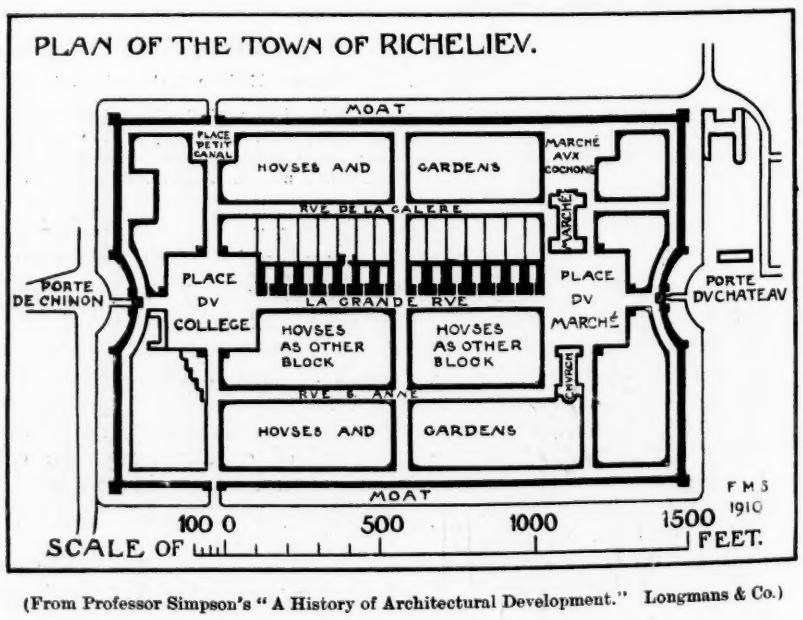
In spite of the element of truth in the suggestion that hospital architects may not always be in touch with the latest results of medical research most architects, we think, would be inclined to say that hospital competitions needed strengthening up rather on the architectural than the technical side, and that there is already a tendency to assess them on technical details upon which even hospital experts may differ. If this tendency is to be accentuated by associating hospital experts in the awards it certainly would be necessary to counteract it by the inclusion of one or more architects of general knowledge and wide outlook capable of viewing the subject from a detached architectural standpoint.

As for the panel of experienced architects, competent on their merits to act as assessors, it is generally understood that the Institute possesses such a list, and, presumably, makes use of it.

THE TEXT-BOOK.*

CONTINUING his historical series, Professor Simpson in this volume explains that to extend its scope beyond the three countries named would either have unduly curtailed the proper treatment of the subject or would have swelled the book to unreasonable proportions. On perusal it becomes clear that the author is amply justified in this contention; only by the exercise of the utmost restraint and by every effort in

* "A History of Architectural Development." Vol. III. "The Renaissance in Italy, France, and England." By Professor F. M. Simpson, F.R.I.B.A. (London: Longmans, Green, & Co. 1911. 8vo. 21s. net.)



(From Professor Simpson's "A History of Architectural Development." Longmans & Co.)

the direction of compression is it possible to bring a general view of Renaissance architecture within the limits of a text-book.

Indeed we are not at all sure that it is wise to make the attempt. For the purposes of the student such a rapid survey is of less educational value than a more thorough investigation of some special development limited in time and place. The reply may be made that a general sense of the relative importance of all the architectural developments must be grasped as a foundation for more intimate study, but we are inclined to doubt the soundness of this view. Granted the necessity for the historical text-book, the one before us is excellent in its way; it covers the widest possible range of subjects within its specified limits, and at the same time finds space for quite a number of critical disquisitions on the whys and wherefores of the architectural characteristics of the different schools and periods.

None the less, it is impossible to avoid a certain feeling of irritation with the constant change of scene. Just as the reader is beginning to get interested, he is, perforce, "moved on" by reason of the necessity of covering so extensive an area between the two covers of a conveniently proportioned volume.

It will be understood that this criticism is not aimed at Professor Simpson's work, which achieves its purpose admirably, but we are entitled to question whether the almost universally approved method of the comprehensive text-book is a sound one from the educational standpoint. We do question this, mainly in view of the consideration that the accumulation of unrelated facts is of little educational value. In his chapters on the development of Renaissance churches and on the construction of domes the author gives comparative studies of real value to the student, and we should have welcomed a treatment more on these lines for the other sections of the book. Here and there we see, indeed, a reflection of this method, but the generalisations and extended outlook considered essential in a text-book cut across these essays and prevent their reaching a complete and conclusive form.

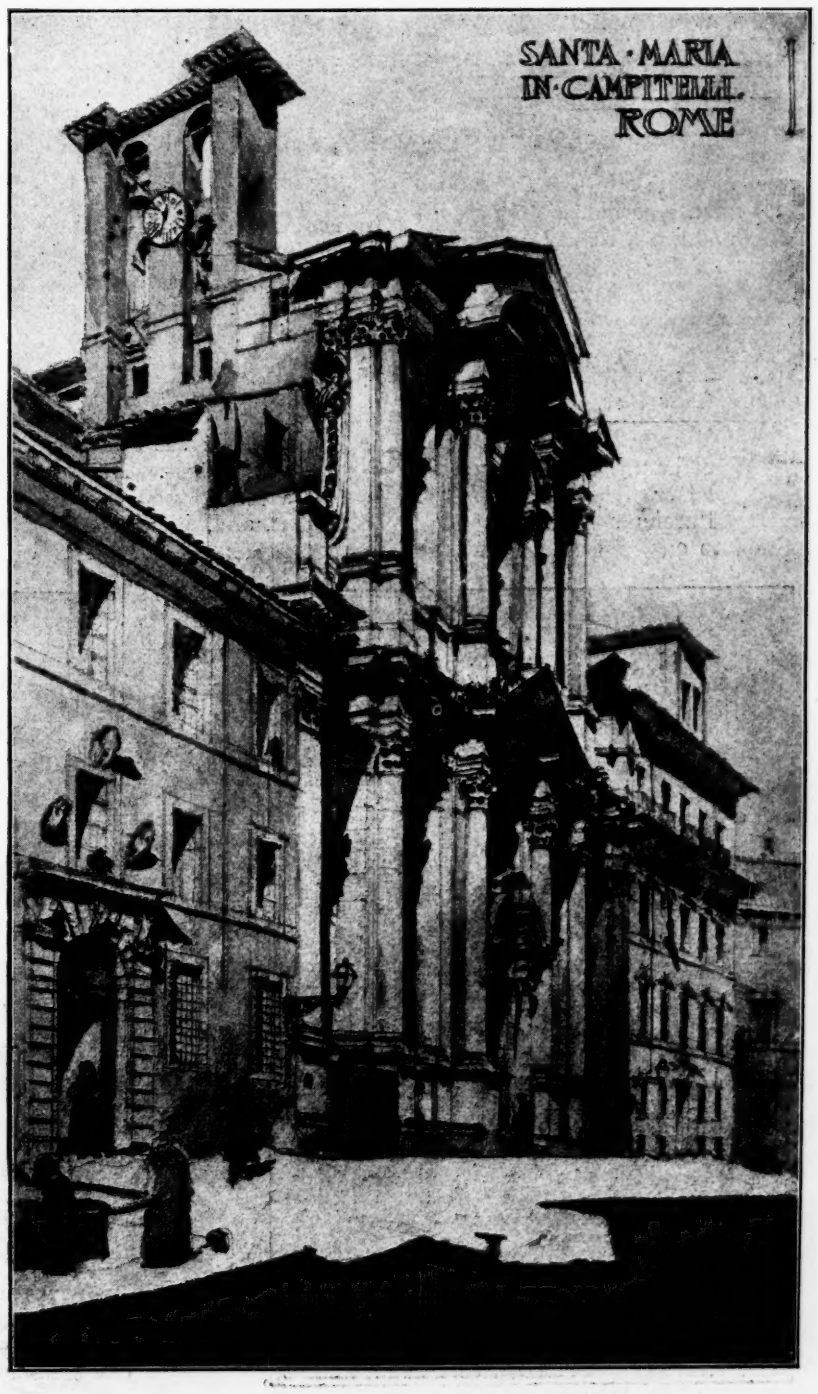
The later Renaissance in France seems to suffer most from the compression inevitable in a work on this basis, but, of course, the two important books recently published on the French Renaissance provoke unconscious comparisons which cannot be fairly made. Though Professor Simpson has treated France somewhat briefly, we are glad to recognise that this is in no way due to a lack of appreciation of the merits of its architecture, as will be seen from the paragraph closing this portion of his book:—

"The François premier buildings are well known to most English students, but the later examples in France have hardly received the attention they deserve. In some respects they are more valuable to us than Italian buildings. They are more recent; their materials more resemble ours; the requirements of their day differed little from our requirements now. And they present such variety. They form a school in themselves. To advise careful study of them is not to recommend neglect of either Italian buildings or our own. Opportunities for studying all are now easy, and time ought to be found for all. Attention should also be given to modern work in France. Notwithstanding the political upheavals the country has experienced, her architectural traditions have remained unbroken for centuries. They have been assailed and opposed by Viollet-le-Duc and a few others, but have emerged triumphant. The École des Beaux-Arts has preserved them, nurtured them, and passed them on from one generation of students to another. To this cause is largely due the excellence of the work of the present day. It may occasionally be dull, but it is never bad; and its best excels the best of any country in Europe."

Coming to England, we again feel the pressure due to the demand for condensation. Might not the crude beginnings of the Renaissance in Elizabethan and Jacobean periods have been dealt with in a brief introduction, leaving the space so economised for a fuller treatment of the more refined work of the XVIIIth century? After Blenheim we get but little, although a short supplementary chapter is devoted to the varied and conflicting ideals of the XIXth century.

The work of the brothers Adam is not illustrated, which is to be regretted, as this work may be regarded as the most distinctively national of all the developments of the Renaissance style in England. True, the no less characteristic Louis Quinze is equally ignored; so, were it not for this last chapter, we should have assumed that it was the intention to bring the work to a close early in the XVIIIth century, the date at which the jurisdiction of our Royal Commission on ancient buildings ceases. We would not accuse Professor Simpson of regarding all more recent work as unworthy of notice, his view being, more probably, that it does not come within the period covered by the term "Renaissance." Be that as it may, is it not of greater value to the student as an illustration of carefully studied design and accomplished technique than the tentative efforts of the period of transition from Gothic to classic detail?

Possibly we may have a further volume dealing with the XVIIIth and XIXth centuries, as these are assuredly worthy to be included in the curriculum of any school of architecture.



From a Drawing by Mr. Leslie Wilkinson.

(From Professor Simpson's "A History of Architectural Development." Longmans & Co.)

NOTES.

The Associates and the R.I.B.A.

THE proposal to give equal representation to the Associates of the Institute of Architects not being strongly supported at the meeting on Monday, and failing to convince the meeting, the justice of the case seems to be met by an undertaking that the Council would consider the matter and report to the general body, which will then have a further opportunity to discuss it. As we have already pointed out, the present position of affairs is a source of weakness. If matters are allowed to drift in what appears to be their present direction, the future may show us a house divided against itself, and so reduced to impotence. This is a danger which can hardly escape the notice of the Council. When considering the question of representation, the present constitution of the Associate class, the general trend of their apparent policy, and its effect on the future of the Institute will no doubt be borne in mind. Considering the importance of the issues involved and the necessity that when taking its next step forward towards Registration and the unity of the profession the Institute should be in a position to do so as a united body without fear of opposition on a side issue from a class of its members who as individuals may agree with its proposals on their merits, it might perhaps be thought desirable to appoint a strong and representative Committee to inquire into the whole question and endeavour to come to some solution which would be equally acceptable to all classes. The position created by the examination has to be faced, and the sooner it is faced the better.

The Attitude of the Associates.

WE publish in another column an interesting letter from Mr. W. S. Purchon, which adds further proof to our suggestion, that the examination is at the root of the difficulty. That the Associateship indicates something perfectly clear and definite, while the Fellowship does not, is no doubt true at the present moment; but if the Associates passed in as a matter of routine, the Fellowship would soon mean something just as definite: the qualification of an Associate plus seven years of actual practice. While, however, the Associates retain their present attitude it is difficult to see how this desirable result can be obtained except by alteration of the constitution of the Institute. To this end the suggestions put forward by Mr. Purchon seem to point, and we think they are well worthy of consideration.

Publication of Speeches in the R.I.B.A. *Journal*.

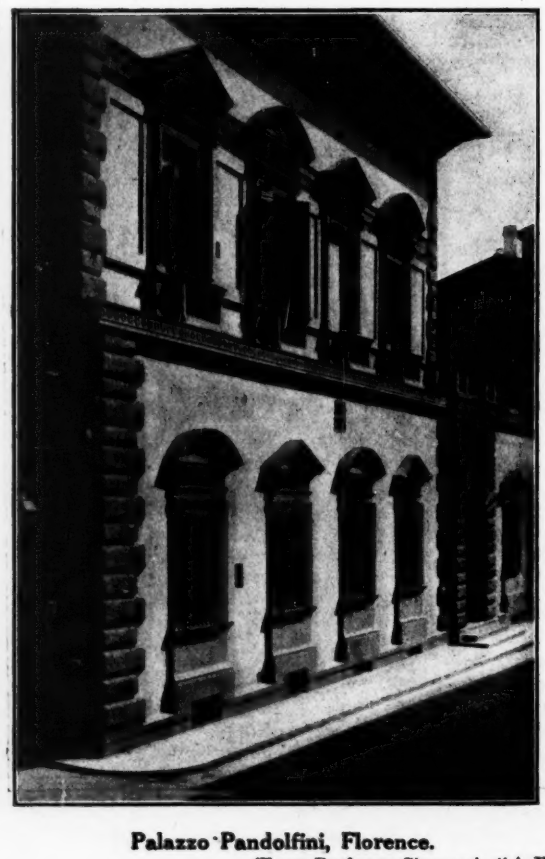
ALTHOUGH there is something to be said for the proposal that a complete Report of all speeches delivered at business meetings of the Institute should be published in the *Journal*, it is probable that the course ultimately adopted of leaving a wide discretion to the Chairman will meet with general approval. No doubt it is, as a rule, desirable that the views of any member should be accessible to all the members. Particularly is this the case when these views happen to be opposed to those held by the majority or by the governing body for the time being. In the unlikely—we might almost say inconceivable—event of their improper suppression, a direct injustice might be done to the individual, and an indirect injury might, in consequence, be inflicted on the Institute; but if every indiscretion or lapse from good taste, short of libel, that was uttered at a meeting was reported intact in the *Journal* far greater harm might result. Evidently it is a case in which someone's discretion must be trusted, and, judging by some recent remarks which might well be considered objectionable by the members of a society in negotiation with the Institute, the meeting was well advised in preferring to trust to the discretion of the Chairman rather than to that of each or every one of the members.

The Lady Architect Again.

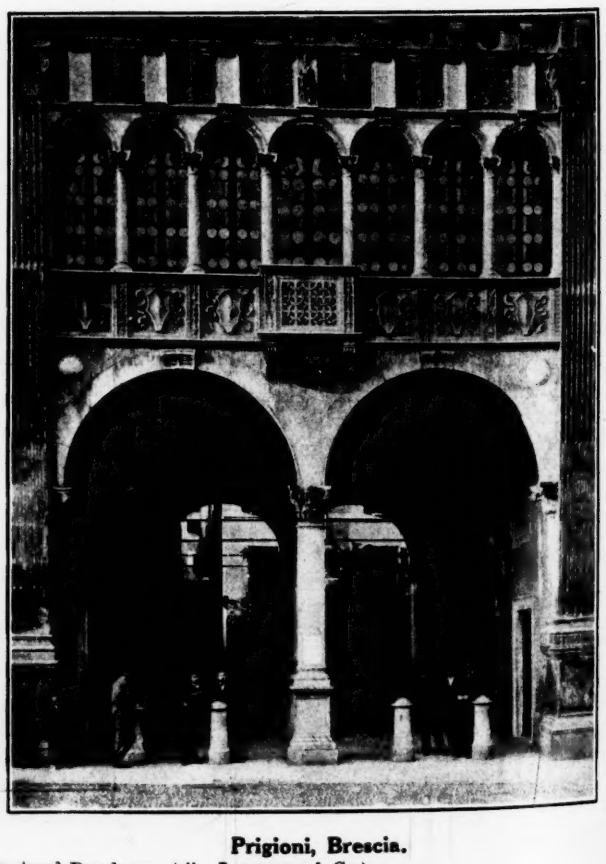
THE lady architect, herself a perfectly rational and normal character, does not gain by the way in which her case is presented to the public. In the *Daily Chronicle* the topic was dealt with a few days ago in some chatty paragraphs which are sometimes amusing, but which one hesitates to believe can appeal to the emancipated of the sex, for here one finds, besides facts usually trite and obvious, other things which display a lamentable want of knowledge of the actual facts of life.

"Her sense of the beautiful will save her from 'cheap nastiness,' and from incongruities of colour and design. Her own home-training will teach her how to combine comfort, cleanliness, and convenience. She will know where to put the coalhouse, the larder, and the gas-stove so as to save the housewife all possible inconvenience. She will make the kitchen conveniently near the dining-room, and yet not near enough for the family to be disturbed in the event of Mary Jane having 'callers.' She will have plenty of dry cupboards, cupboards with shelves and cupboards without. She will not have windows that stifle or that require wedging, or that are difficult or dangerous to clean, or rooms so shaped that they are impossible to furnish tastefully. She will see to it that 'domestic upheavals' produce the minimum amount of bad temper and discomfort, that water-pipes do not burst, and that the whole house is well warmed even in the coldest weather. Her natural tact and quick perceptions will help her to understand her clients' wishes and to carry them out faithfully. Her sense of humour will go far to save her from the loneliness of having so little professional companionship in her own sex."

In this comprehensive bid for patronage the lady architect does not omit the inevitable claim to intuitive genius, but adds also a monopoly of the humorous sense—surely a sign of the advancing



Palazzo Pandolfini, Florence.



Prigioni, Brescia.

(From Professor Simpson's "A History of Architectural Development." Longmans & Co.)

times. But she does fail to acknowledge the weak points in all such eloquent passages that the mere male architect cannot (if he wishes) altogether avoid—that intimate knowledge of domestic convenience which the training of the lady architect in office and technical school so admirably inculcates. In spite of the general decadence of the male sex, the average architect is fortunate enough to be married, and if lack of means or opportunity prevents such a consummation, there is always an alternative which no man of experience can lightly disregard, and that is no less a personage than the lady client! If architects still resist the feminine tendency to make the home a mere agglomeration of cupboards and utensils, they have nevertheless surpassed other professions in gladly throwing open their institutions and societies to the lady architect herself. Competition grows keener and keener every year, but the pioneer will not gravely affect the stability of the profession unless she is prepared to take things seriously and face male competition on her own merits.

The Hampshire Association of Architects.

OUR readers will be interested to know that at a meeting of representative architects of Hampshire, held at Southampton on the 2nd inst., it was decided to form a Hampshire Association of Architects on the lines of those affiliated to the R.I.B.A. Mr. R. F. Chisholm, F.R.I.B.A., presided. Draft rules were considered and passed, also declarations to be signed by members, Associates, and associated craftsmen. Sir William Portal, Bt., F.S.A., was elected President, and Mr. N. C. H. Nisbett, A.R.I.B.A., Vice-President and Chairman of Committee; Mr. R. M. Lucas was elected Hon. Secretary and Treasurer, with Mr. Ingalton Sanders assisting. We welcome the new Society, and hope it will have a long and useful career.

THE "REINDEER" INN, BANBURY.

BANBURY, on the Cherwell, in the county of Oxford, is placed in the centre of one of the most fertile districts of the country.

Formerly it had several flourishing industries, but these gradually declined and disappeared to vanishing point, and it is feared that the beautiful and picturesque buildings will share the same fate.

There is much to interest the archæologist and artist in this once important market town, notwithstanding the destruction of so many interesting records of the past. The beautiful church, one of the largest in the county, was ruthlessly destroyed to make way for a classic temple built in 1793. A rhyme of the period runs :—

"Dirty Banbury's proud people
Built a church without a steeple."

The castle stood two sieges during the Civil War, one of many weeks' duration, in 1644, under the brave ancestor of Lord Saye and Sele of Broughton Castle, when the garrison was relieved after all their horses had been eaten.

"The Cross" was destroyed long ago by the Puritans, but a later generation replaced it by a structure designed in the early days of the Gothic revival.

Of the interesting old houses and inns the most conspicuous is the picturesque hostelry, the "Reindeer," which was always worth a visit to Banbury. This interesting building, with its gable and fine stone mullioned window, was built in 1624.

Within there is a beautiful room (called the Globe Room) with fine oak panelling. It has a very elaborate, and probably unique, plaster ceiling of intricate design; at a great expense a copy of this was made for the Victoria and Albert Museum.

It is unfortunate that the Town Council had not powers to purchase the "Reindeer" and preserve it to the town, or that it could not be bought and taken over by the Society for the Preservation of Ancient Buildings, and be thus kept in this country instead of being transported to America as appears to be contemplated.

THE CARPENTERS' HALL LECTURES:

MEDIÆVAL SCULPTURE.

THE fifth of the present series of Carpenters' Hall lectures on Arts Connected with Building was delivered on the 21st ult. by Mr. W. H. Bidlake, M.A., whose subject was "Mediæval Sculpture"—to the end of the XIIIth century.

Mr. Bidlake, who showed a fine collection of lantern slides, said he proposed to speak of sculpture as a decorative art, and to consider it in relation to the building of which it was the noblest ornament. Twice in the world's history had decorative sculpture been truly great. The Greeks of the Vth century B.C. and, nearly 2,000 years later, the French of the XIIIth century A.D. realised the harmony of sculpture and architecture.

Having compared briefly the two ages and surveyed the circumstances which gave rise to Gothic art, the lecturer mentioned some of the disasters which overtook the Western Roman Empire from the IVth century. Proceeding, he said it was difficult for us nowadays to realise the paralysing dread with which the advent of the year 1000 was regarded or to measure the full extent of the relief when it was passed. As a direct result, a great wave of exaltation and religious enthusiasm swept over Western Europe, the Church rapidly rose to the height of her power, the monastic Orders to the limit of their influence. It was in these days that mediæval sculpture was born. We could not have art without feeling. Art is the expression of the stirring of the spirit's inner depths. The routine designing and mechanical execution of our modern commercial workshops was not art at all, and never could be until its whole spirit and method changed.

In Byzantium the arts after the temporary eclipse of the iconoclastic controversy of the VIIIth century, which was a reaction against the worship of images in churches, and which indirectly led to the immigration of Byzantine artists into the West, recovered themselves and reached their fullest development during the great Macedonian and Comneni dynasties of the Xth and XIth centuries. It was just at this time that the soil of the West lay fallow for the seed, and the art which in due time sprang up had been called Romanesque art. Romanesque art, and especially Romanesque sculpture, was of very mixed origin, and from the character of the surroundings or external influence one trait predominated in one locality, another in another. In the South of France, and especially in the district between Limoges and Toulouse, the Byzantine element asserted itself. Byzantine influence was even more manifest in the art of Western Germany. Occasionally the Norse element asserted itself, especially in Herefordshire, as at Shobdon and Kilpeck, in the myth of Fafni the dragon.

The "Reindeer" Inn, Banbury.
From a Drawing by Mr. S. Aveling.

Barbaric, too, was the overladen and unrestrained ornament which characterised our late Norman style, as in the west front of Iffley, which was akin to the decoration of a Maori canoe-paddle. It was the element of the grotesque, often interwoven with the foliage of the capitals that was so characteristic of Romanesque stone carving. The style was exhibiting a most extraordinary energy and displaying an unbounded spirit of experiment and invention. It was a living style. It was yearly freeing itself from the conventions and mannerisms of its Byzantine swathing and acquiring a language of its own. If our art to-day was not venturing, experimenting, and advancing, if it was content with reproducing forms from which the spirit had fled, then it was a dead art, but a dead art practised in the living present was a contradiction in terms.

A survey of the origins of Romanesque art would be incomplete without reference to the Saracenic influence in the South of France, which spread from Spain and the Mediterranean. The civilisation of the Arab conquerors of Spain was in advance of that of Europe, and amongst them both the sciences and arts were more developed. Indeed it was from the Arabs that Europe received that spirit of scientific inquiry that began to work like a ferment in men's minds, notwithstanding all the efforts of the Church to suppress it.

In the larger figure sculpture of the XIIth century Byzantine mannerism was very apparent. The figures were rigid and immobile, and the drapery was either stiff and bejewelled, or indicated by parallel grooves cut over the modelling of the figure without the slightest pretence of the study of drapery or appreciation of its capabilities of expression. In other cases it was studied not so much in relation to the figure as to produce a decorative effect, and the hem was often doubled and pleated in a manner strangely reminiscent of archaic and still more of archaistic Greek. Besides the school of Arles in the South, there existed a quite distinct school in the south-west of France, of great originality, and characterised by the dramatic expression of its figure sculpture, the almost volcanic energy of its tearing beasts and a strongly decorative feeling, as one may see in the great doorway at Moissac. How great a contrast to this expression of southern energy was presented in the North by the placid figures of the royal doors in the west front of the Cathedral of Chartres. The statuesque nobility of these figures as well as the gravity and sweetness of the expression which play over their faces compelled our admiration. Who that had seen them did not love them?

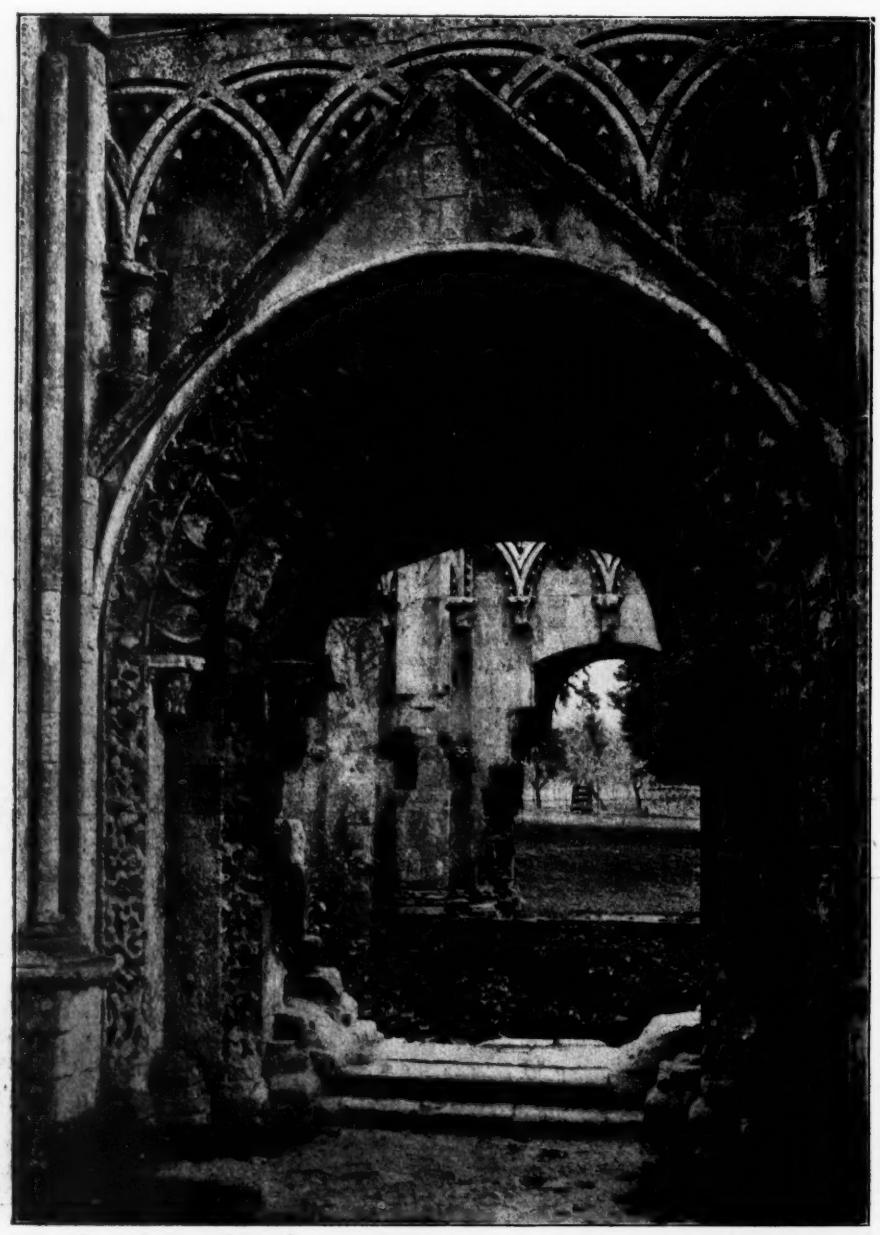
There was no division of labour in those days, such as there is now. The sculptor did not belong to a caste apart with a private studio and an aristocratic connexion. He was fellow-workman with the mason. He was called the "imager," and could probably take a hand in any kind of stonework that came his way; perhaps, too, in much other kind of work the bane of the modern division of labour is that one man designs and another executes, so that the one lacks the pleasure of executing his idea and the other the pleasure of inventing his work. Still, the question obtruded itself, Was the sculptor the imager going too far in making his figures, as at Chartres, so very attenuated? Recognising that they were placed on the door shafts and that it was desirable that he should bring his figure design into harmony with its architectural setting had he not sacrificed too much? Granted, too, that the total effect was splendidly decorative, could not the same effect have been produced without such sacrifice of the proportion of the human figure? There was here a singular parallel in classic Greek art. On the south side of the temple of Athena, known as the Erectheion, at Athens, there was the famous caryatid portico, in which the entablature was borne by draped female figures in place of columns. As the figures actually carried the weight, it was even more essential that they should be in harmony with the architecture than was the case with the Chartres figures. It was inconceivable that a Greek sculptor should sacrifice the beauties of human proportion under any exigency. Nor did he in this instance. He made his figures the epitome of strong, vigorous womanhood, the features calm and dignified, the weight thrown on one limb, he expressed in the vertical folds of the drapery, which challenged comparison with the flutings of the columns of the neighbouring portico, and the neck which might otherwise suggest by its temerity the overpowering weight of its burden, he strengthened and supported by massive coils of hair. Triumphantly he had solved the difficulty; no whit of human beauty had he sacrificed, yet his stately figures, in perfect line with the temple architecture made light of the burden that was imposed upon them.

The problem of the Chartres figures was also to be solved in due course, in the west portals of Rheims. For the present, in the Romanesque schools the decorative treatment of the sculpture and its subordination to the architecture was the paramount consideration, and we must bear this aim in view in measuring the success of their achievement. The full realisation of sculpture, as sculpture on the one hand, and its due subordination to the architecture of the building which it decorated on the other, can with difficulty be reconciled.

As the XIIth century advanced the Romanesque sculptors in general seemed to have sown their wild oats of decorative unrestraint, and as it drew to a close and the architectural style changed to Gothic, in response to a more skilful construction and disposition of material, that restraint became manifest without which no art could be truly great. The change could be well studied in England. In England during the Romanesque period little sculpture of any value was done, the west door of Rochester Cathedral being the best example, as it was the only example of sculptured figures arranged in the jambs after the manner which had already become so common in France. Meanwhile magnificent progress had been made in the art of building, and nowhere in France had cathedrals been erected on a grander scale than those which formed the churches of the great Benedictine monasteries of Durham, Ely, Peterborough, and Norwich. The Benedictine monasteries of Western Europe had rendered splendid service to the arts, which, but for their patronage and asylum might have perished in the anarchy of the Dark Ages. It was to the Cisterican Order of reformed Benedictines that we in England owe the introduction of those new ideas in Romanesque building which resulted in the development of Gothic. The new departure which might be studied in the ruins of many of the Yorkshire Abbeys consisted in something more than the introduction of the pointed arch. A new spirit breathed in their architecture, a wholesome spirit of restraint.

The severe rules of the Order forbade any decoration of sculptured figures, and as a similar, though more extended, prohibition in the Koran obliged the Arabs to evolve their characteristic ornament, so the restriction in their case diverted their attention from figure sculpture to the adornment, the articulations of their building of capitals, bosses, and stops, thus giving piquancy and accent to the construction. Laying aside the Romanesque acanthus and the Norman cushion capital, they evolved a treatment of foliage capital not by the direct study of plant form, but by expressing the principle of plant growth, and that in a manner perfectly suited to the material in which it was carved. Indeed it would be difficult to find a better example of design growing out of the distinctive treatment of the material.

As to the figure sculpture of the English, and especially of the French schools of the XIIIth century, the disposition of the sculpture on the cathedral façades was quite different in the two countries. In France it peopled the great triple portals and stretched overhead in an unbroken line of kings or ancestors of Christ. In England, on the other hand, the west doors were comparatively insignificant, and the sculpture, where there was such, was arranged in niches, row upon row, across the west front, as at Lincoln, where it had disappeared, or Lichfield, where it had been restored. At Wells it was fitted into the architectural framework,



Glastonbury.

and was the finest XIIIth-century figure sculpture we possess, albeit some would attribute it on slender grounds, and, notwithstanding its English character, to Italian artists. The nobility of pose, the serenity of expression, the studied drapery arranged in severe folds to harmonise with the architectural setting of buttress and shaft, all combined to make this statuary unrivalled in English XIIIth-century art. The relief carving of this period was also excellent. In the place of the beautiful scroll-work of similar character to the carved capitals, which filled the spandrils of the wall arcade of Westminster Abbey or Stone Church, the spandrils of the arcade of the retro-choir of Worcester were carved early in the century with figure subjects, while towards the end of the XIIIth century was executed the well-known series of angel musicians filling the spandrils of the triforium of the retro-choir of Lincoln which had given this part of the cathedral the title of the Angel Choir.

Not all the figures were of equal merit, but the best reach the high-water mark of English sculpture in pose, treatment of drapery. &c.

In France, and more especially in the great cathedrals of the district round Paris, which was called the Ile de France, the sculptor was less content to subordinate himself to the architect and his greater power entitled him to fuller expression.

After the overthrow of the English power in France by Philip Augustus and the expulsion of our armies from Normandy, a great outburst of building activity resulted in and around the capital, synchronising with the period when French architecture and sculpture was rapidly moving to the zenith of its achievement, and it was to this district, therefore, that we must look for its greatest triumphs.

The art of the time appealed to the multitude; they understood it, they rejoiced in it, the creators of it were their own fathers and sons, the Craftsmen and the "imagers." And this public appreciation reacted on the workers and spurred them to their best. That was why French architecture and sculpture of the XIIIth century was truly great. The plinths or lower portions of the great French doorways were usually decorated with panels or medallions, or arcading intended to instruct the people in Bible history or guide them in the conduct of life. These subjects were often carefully contrasted so as to form a subtle balance on the two sides of the door similar to that balance of subject to be found in the pediments of the Parthenon. Thus the old Testament saints are contrasted with those of the New, the Church with the Synagogue, the wise virgins with the foolish ones, the vices with the virtues, the signs of the Zodiac and the labours of the year.

Vivid and realistic as these reliefs were, and sincere no doubt as their sculptors were, we must not be misled into thinking that on that account they excel as sculpture. Indeed, it was not the function of sculpture either to tell stories or preach moralities, and just in proportion as a sculptor sets himself to do either he ran the risk of sacrificing his work as sculpture. It was, therefore, not to these reliefs, but to the figures in the round which decorate the door jambs that we must turn for the French sculptor's greatest attainment. At Amiens, and especially at Rheims, the sculpture was of the highest quality, and nearly approaches that of ancient Greece, both in expression, dignity of pose, truthfulness in rendering the figure, and in the design of the drapery which, no longer treated in the stiff, conventional folds of the earlier work, now expressed the figure which it clothes, as well as the nature of the material of which it was made. The statues at Rheims no longer stood in severe isolation, but were grouped together to represent episodes in the life of the Virgin to whom the cathedral was dedicated, and this grouping was subtly indicated by a slight inclination of pose or direction of gaze which again reminded us of the pediment sculpture of the Parthenon, in the subtle indication of relationship of one figure to another, or to the central group. On the south jamb of the central door were two figures strikingly Greek in their technique, which seemed to suggest that their sculptor must have seen some original Greek work.

NEW CLUB, BLYTH.

The new premises of the Duke of Wellington Workmen's Social Club have been erected at a cost of about 2,600*l.* from the designs of Mr. J. Goulding, architect, Blyth. The contractors were Messrs. Robson & Waddle.

INDUSTRIAL UNREST.

HAVING regard to the period of industrial unrest through which we are passing, and the dislocation of trade consequent thereon, which affects all classes of the community, it may not be unprofitable to glance for one moment at the statistics for the past year.

Last year was one of increasing prosperity, and in the past experience has been that years of increasing prosperity are marked by industrial peace. Yet what was the history of last year? An article, entitled "Employment, Wages, Prices, and Disputes in 1911," in the *Board of Trade Labour Gazette* for January commences with these ominous words:—"The good employment which was very general in 1911 was discounted to some extent by industrial unrest."

In the first place, let us see what were the results of this industrial unrest; 931,050 workpeople were involved in disputes which commenced in the year—the largest number recorded in the statistics of the Department. Fortunately, the disputes were not of long duration, but, nevertheless, they represented a loss in working days of 10,247,100; excluding agricultural labourers, this means a loss of about one working day per head of the industrial population, and 9 per cent. of that population were involved in disputes. What is the money loss of this kind of industrial warfare? If each person earned but 2s. 6d. a day, we have here a useless loss of 1,280,887*l.*

The year was one in which the rise in rates of wages which commenced in 1910 was continued, the net result being an increase of 25,927*l.* per week, and it surely is a significant fact that this increase in the rate of wages totals 1,248,204*l.* for the year, or 32,683*l.* less than the sum lost by disputes, computing that loss on the low rate of wage of 2s. 6d. The figures given above relate to rates of wages only, not to the sums paid in wages, and it may be assumed that some at least of the disputes were entered into to gain an increased rate of pay. If that be so, what has been the result of the industrial unrest in this connexion? The result, as shown above, is that the increased rates of wages obtained have been more than lost to the industrial population by profitless disputes. If it be urged that lack of employment is the excuse for industrial unrest, and that the figures relating to rates of wages have no bearing upon those earning no wages, the statistics again afford a complete answer to such a contention, as the figures relating to the 800,000 members of trade unions show that the mean percentage of unemployment fell to 3 per cent., as compared with 4·7 per cent. in 1910, 7·7 per cent. in 1909, and 7·8 per cent. in 1908.

At a time of industrial crisis these figures are surely worthy of the consideration of all classes. The loss to the labouring population by these continued strikes can be demonstrated, as above, by figures, but the loss to the employers and the loss to the nation cannot be ascertained, nor are the effects of each strike limited to the period during which it continues. Work and capital leave the country, possibly for good and all, and in too many cases whilst we are engaged in fighting over shadowy principles the substance of our trade is going abroad. As we pointed out recently, one of the reasons put forward for industrial unrest is the rise in the cost of living, and we dealt with some of the causes of this rise. We need not recapitulate here, but we may refer to some of the statistics relating to retail prices, as they fail to show any serious crisis calling for immediate drastic measures. The retail prices for food in 1911 showed a decline on the whole of 0·5 per cent. as compared with 1910, and for the first nine months of the year they were lower than in 1909 and 1908. The long drought caused a rise in certain commodities, but this rise was not continued, and such articles as bread, bacon, and oatmeal showed a heavy decline. The statistics for London show no serious rise in the twenty-three principal articles of food in the last four years.

The causes of labour unrest cannot be wholly traced to this cause, although the rise in the necessaries of life taken over a long period has something to do with it. The causes are complex: increased ideas as to the standard of luxury necessary to existence prevalent amongst all classes; higher education amongst the working classes, which engenders a natural feeling of restlessness; increased taxation and rating; and, lastly, mistaken ideas as to the nature of wealth. These latter cannot be better exemplified than by quoting a sentence contained in a letter recently written to the *Times* by a leading Socialist:—"I think it should be generally recognised that the wage-earners in many departments are not only discontented with their standard of life . . . but many of them are beginning to ask why they should be condemned to toil all their days for a very poor remuneration and very small enjoyment of existence, when, with the present power of man over Nature, wealth might be made as plentiful as water, and all who do useful work during a few hours in the day might have a really pleasurable time."

Many of the above causes deserve careful consideration, others condemnation, but the statistics which we have quoted, at any rate, show that internecine industrial warfare carried on by means of lock-outs and strikes is fatal to the interests of the nation, and we may point out that the remedy lies not in measures of the type of the Trade Disputes Act or the Eight Hours in Mines Act, or in fixed minimum wage, but rather in the direction of co-partnership, co-operation, and conciliation.

SOUTHWARK CATHEDRAL.

THE opening on February 13 by the Lord Mayor of the new bridge and gates which will now form the main approach to the cathedral marked also the completion of the restoration of certain parts of the building itself.

Externally, the bridge and the wall and railing surrounding the cathedral is what is most apparent of the work just finished. The new railings and gates are of wrought-iron and simple in design, and replace those put up about eighty years ago, which were of rather an elaborate Gothic design, but, being light and of cast-iron, had become irreparably broken.

The bridge is of Portland stone, the paving and steps being of granite. The style adopted is Gothic of the Decorated period. The four large shields on the parapet of the bridge carry the arms of the Province of Canterbury, the Cathedral and Diocese of Southwark, and of the Parish Church of Southwark (St. Saviour and St. Thomas). Four small shields on the gate piers bear the arms of the four bishops under whom works of restoration and rebuilding of the church have in recent times been accomplished.

The work on the cathedral itself was chiefly confined to the tower, and a very great deal of strengthening and replacing of decayed stone-work has been found necessary.

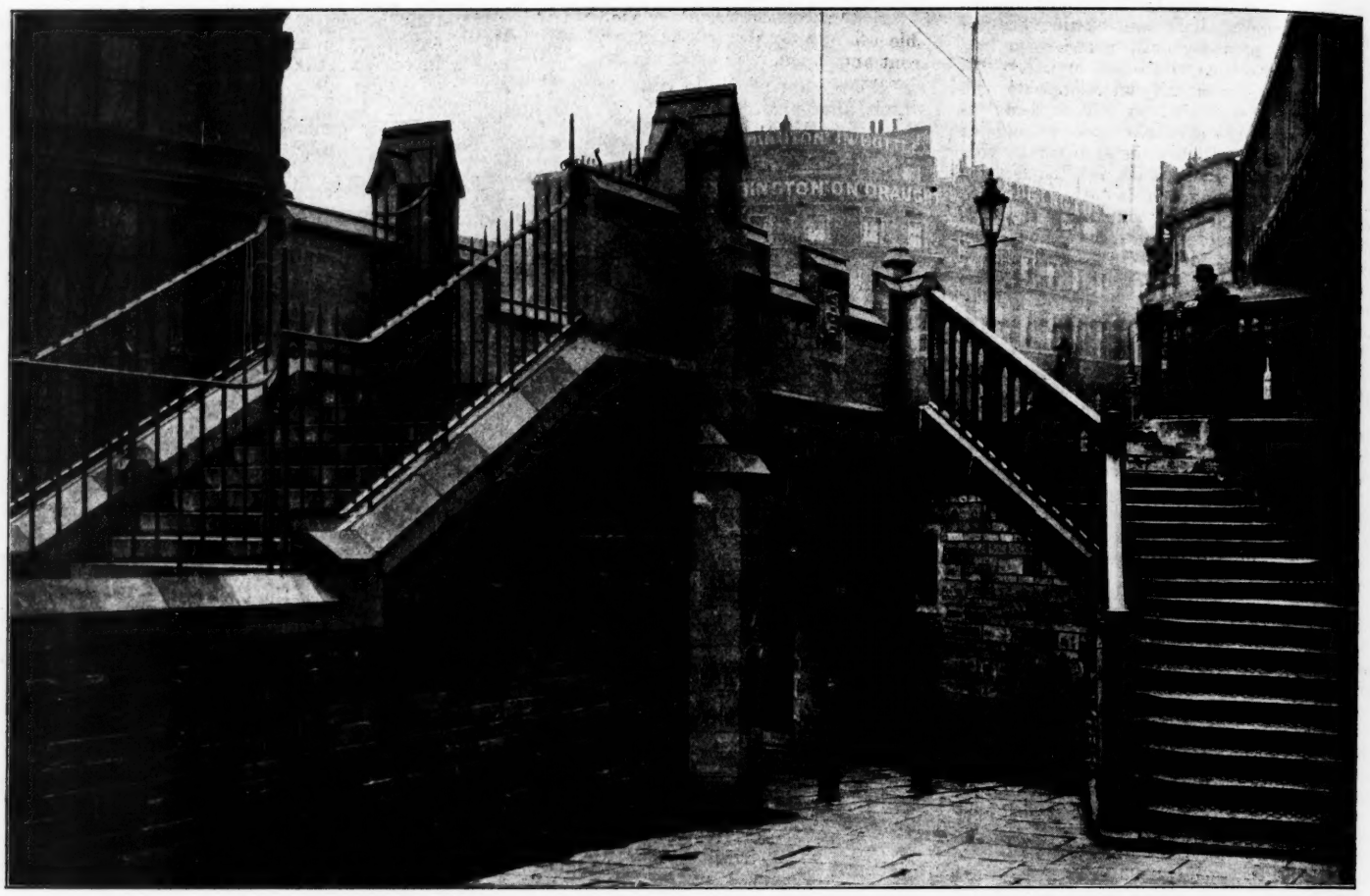
The greater part of the external facing and other features dated from about 1820-30, when Mr. Gwilt, the architect, carried out extensive rebuilding work at the church. The facing in many places consisted of inferior stones, very thin on bed, all of which had to be cut out and replaced.

On the north-east angle the turret staircase originally existed to the top of the tower; this was done away with presumably when the present pinnacles were erected. The inner face of the old turret stairs was disclosed during the present work, and, the more modern angle stones not having been properly bonded in, this corner was found to be particularly weak, and a considerable amount of rebuilding necessary. The new stone used on the tower is Chilmark.

In connexion with Mr. Gwilt's work it is perhaps worth mentioning the extent to which he made use of cast-iron. The tower is at two levels, elaborately (and effectively) bound round with cast-iron bands made in lengths which join with a kind of dovetail joint. They are of heavy section, the larger one being about 6 in by 3 in. solid. They were bedded under the surface and found to be in excellent condition.

The trusses of the choir roof are all of cast-iron, and, besides window frames, the louvres of the belfry windows and even flashings to the copper roofs are in the same material. The trusses and ties are all stamped with the date and the architect's name.

Internally, immediately above the present ceiling an arcaded stage of late Decorated date, which was found walled up, with the



Southwark Cathedral New Approach from London Bridge from South-West.

mouldings much mutilated, has been opened out and repaired.

The ringing chamber above has been refitted. The bells and frame have been very thoroughly overhauled, rehung, and repaired by Messrs. Mears & Stainbank, who also recast the tenor bell, weighing about 53 cwt.

The timbers carrying the bell frame and the tower roof had to some extent perished, and a considerable amount of work was done in repairs and renewal.

The ceiling under the bells (now the ceiling of the ringing chamber) was found to be partially original, of late Decorated date, consisting of oak ribs dividing the ceiling into panels, with finely-carved bosses at the intersections, all bearing traces of decoration. This ceiling was doubtless that originally seen from the floor of the church, whence there would therefore have been visible, above the level of the present tower ceiling, a blank arcaded stage and a lantern stage consisting of the present lower range of windows, an additional 35 ft. in height, or about 105 ft. from the nave floor. Other work lately accomplished consists in repairs to the buttresses and pinnacles of the choir, relaying of gutters to the choir, aisles, and Lady Chapel, and new glazing in the choir clearstory windows.

Excavations for the new bridge and boundary walls to the south-east of the cathedral brought to light several fragments of pottery and some tesselated pavement of Roman times. The latter was at a depth of about 10 ft. below the surface.

The general contractors for the work were Messrs. Dove Bros., of Islington, and Mr. R. Searle has been acting as clerk of works. The architects are Messrs. J. Oldrid Scott & Son, of Dean's-yard, Westminster, S.W.

"ONE AND ALL GARDENING."

The seventeenth issue of this interesting annual (edited by Mr. E. Owen Greening) contains articles on shore gardens, grass walks, etc., and the Editor in an opening article develops a plan for converting the horticultural societies throughout the kingdom into "missionaries" of gardening, to teach and help artisans, cottagers, and others; to promote allotments, home gardens, and the cultivation of vacant lands, and otherwise to aid in converting Britain into a "garden land." The annual can be had from the Agricultural and Horticultural Association.

THE RESTORER AND HIS ATTITUDE TOWARD OLD WORK.

AT the third meeting of the session of the Edinburgh Architectural Association, held on January 28, Mr. William Davidson, Vice-President, delivered a lecture on "The Restorer and His Attitude toward Old Work." The chair was occupied by Mr. J. B. Dunn, F.R.I.B.A., President.

Mr. Davidson, who dealt mainly with ecclesiastical restorations, opened his lecture by dividing restorers, generally, into four classes, viz.: Historical, Antiquarian, Æsthetic, and Ritualistic. The attitude of each was described. The lecturer stated that for the ideal restoration all four standpoints must be considered, and, while a profound reverence and veneration must be felt for all existing beautiful old work, it must be remembered that a church must be suitable for its purpose as a place of worship, and not considered merely as a sanctified museum, utility, comfort, and beautiful composition being absolutely imperative. The architect should not make the restoration an opportunity for the display and glorification of his own personality at the expense of the history of the building, but at the same time a sentimental zeal for the work of the dead should not prevent him from creating a beautiful and perfect unity where such was possible.

Mr. Davidson referred to the recent intervention of "Antiquarian" and "Protection Societies," and maintained that the craze for preserving past history if carried to its logical conclusion would lead to a dead stop in the architectural history of old buildings which, if occupied for their original purpose, still had a living history. He admitted, however, that in the case of unused ruins, such as Holyrood, Linlithgow, Melrose, Fountains, Kirkstall, etc., it was better, generally speaking, if they were only carefully preserved and not restored. He stated that we also have a history to record which is, as a rule, more beautiful than much of the XVIIth, XVIIIth, and XIXth centuries' history.

Many views were shown of restorations by Sir Gilbert Scott, and Messrs. Bodley, Oldrid Scott, Temple Moore, Micklethwaite, Weir, Caröe, and others, which were analysed and criticised. These consisted mainly of abbeys and parish churches, and illustrated various methods of restoring stonework, woodwork, glass, etc. Additions to old buildings, such as chapels, vestries, towers, and the introduction of organs and new furniture were dealt with in detail, and the merits and faults of various systems discussed. The principles and practice of the Society for the Protection of Ancient Buildings were fully treated upon, and, while the lecturer spoke in the highest terms of their work, which had saved to us many priceless gems of mediæval art, he considered that they ignored the æsthetic side of the question too much. Their "no-repeat-of-old-detail" policy had destroyed the scale, proportion, and beauty of many fine old churches. The introduction of plain blocks instead of repeating old moulded work in wood and stone brought in a new scale, which in many cases destroyed the unity.

Many examples of the work of the Protection Society's able architect, Mr. William Weir, were shown, and Mr. Davidson spoke in the highest terms of much of Mr. Weir's work, which always showed such a profound knowledge of the subject and such reverence for the beauty of old work. If the Society's principles, however, were carried to their logical conclusion, it appeared to the lecturer that, as original old work must eventually, sooner or later, disappear, no copy of it would then exist. Mr. Davidson maintained that the work of the best craftsmen of to-day in stone, wood, plaster, glass, etc. (with the exception of the decorative artist), quite equalled that of the XVth century, and he believed that with our present general tendency to return to first constructive principles the day was rapidly dawning when, by the help of decorative and applied art, architecture would again become the glory and pride of our country, as it had been in mediæval times. In speaking of additions to old buildings, the lecturer agreed that they should not be merely copies of existing parts of the building. They should speak their history unmistakably, but the great feature to be noted was that if the scale of the original work was good, it should be carried out in the new work. Examples from the Cathedrals of Florence and Chartres were shown to illustrate this point. The restoring of hammer-beam roofs and rood-screens was shown by fine examples from Norfolk and Suffolk. In speaking of restoring glass, some excellent examples were shown from Chartres, Winchester, York, Norwich, etc. He agreed that no new glass should be introduced among old. Better a small panel of old kaleidoscopic fragments

in the centre of plain old Dutch square or diamond panes, as was so beautifully done by Mr. King, of Norwich, under the supervision of Mr. Weir, at the east window of St. Peter's, Hungate, Norwich, than any attempt to complete the design. In speaking of painting, figure-painting especially was such a personal work that any attempt to restore it rendered it absolutely worthless, even when done by the most sympathetic and able of artists. In purely geometric or floral work it might be done fairly successfully, as was seen at the chancel roof of Southwold, which, though repainted twice (he believed), still retained much of the mediæval feeling. Figure wall painting, such as South Burlingham, Potter Heigham, etc., and the work on the rood-screens, should never on any account be touched up or restored, but carefully treated for preservation by an expert if they showed signs of decay. The rebuilding of the Campanile at Venice was referred to as a piece of misplaced sentimentality.

In concluding his lecture, Mr. Davidson stated that no hard-and-fast rule could be drawn up for the guidance of the restorer, but he must possess a profound knowledge of old work, the uses of various types of plan, a thorough grasp of the evolution of design, a deep reverence for all beautiful old things, and be filled with unbounded enthusiasm for each work entrusted to his care—an enthusiasm which leads to a non-personal view of each individual problem, and which will be more jealous to preserve any real beauty of bygone years than make its destruction an excuse for the display of his own personality and ability, but which will not at the same time sacrifice a glorious opportunity for a mere sentimental zeal for the work of the dead.

At the close of the lecture a keen discussion took place, in which Mr. John Watson, F.R.I.B.A., Mr. J. B. Dunn, F.R.I.B.A., Mr. James Gillespie, Mr. W. Stewart Morton, and others took an active part.

A hearty vote of thanks was accorded to Mr. Davidson for his able, analytical, and lucid treatment of the subject.

The lecture was illustrated by 100 lantern slides of English, French, and Italian cathedrals, English abbeys, and parish churches.

BIRMINGHAM COUNCIL HOUSE EXTENSION.

On the 22nd ult. the architects of the Birmingham Council House extension, Messrs. H. V. Ashley & Winton Newman, of London, supplied to members of the Birmingham Architectural Association, at a meeting in the Exchange Buildings, some particulars of their work at the Council House. Mr. C. E. Bateman (President of the Association) occupied the chair.

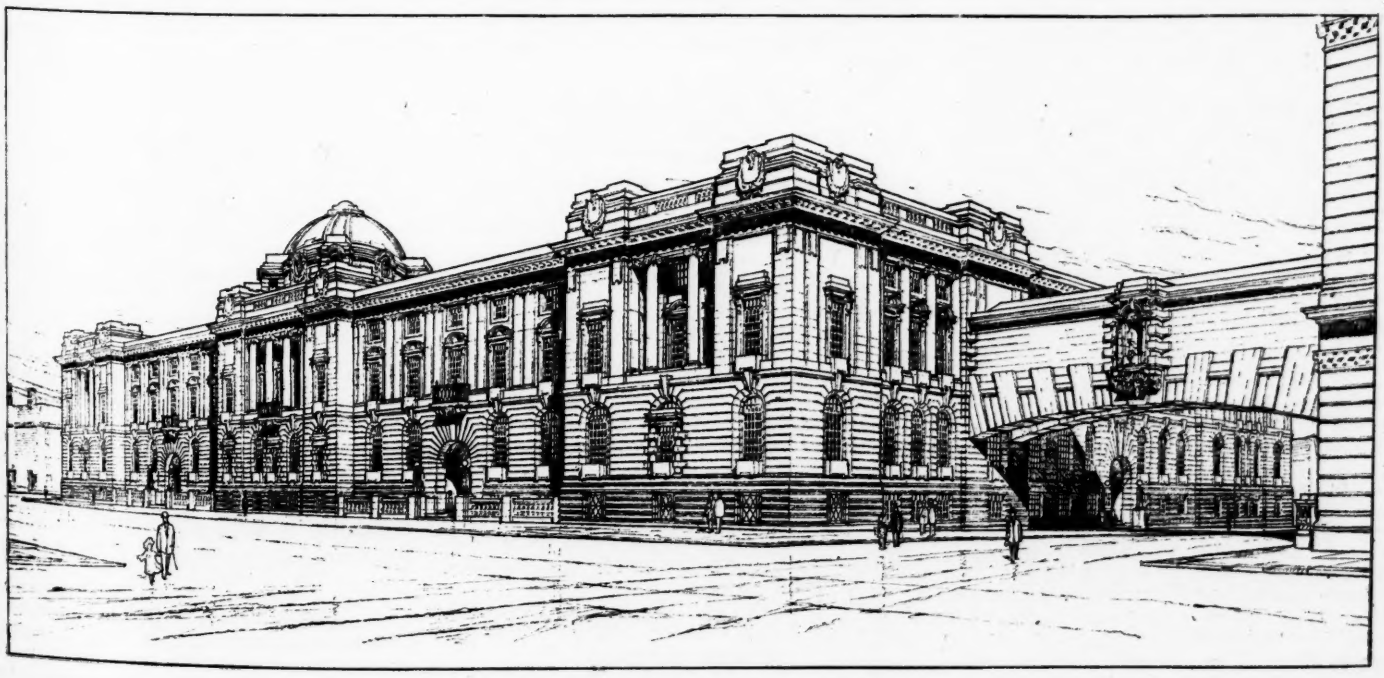
Mr. Ashley, during the course of his paper, said it was interesting to note that the plans in the second competition had been very little altered. The site was practically four-square. On the east, or Margaret-street, front was the Education Department, consisting of four floors of innumerable offices; on the south, or Edmund-street, front and in the interior of the site was the Gas Department; and on the west, or Congreve-street, front, including three floors, were the offices of the Health and Tramways Departments, both of which had already outgrown their new quarters since the extension of the city. On the first floor over the Gas Department were the new picture galleries, and on the second floor of Congreve-street the Natural History Museums, both approached from the present Round Room over the new bridge across Edmund-street. The completion of the extension on the north side was now in hand, and would give further accommodation for the Tramways, Health, and Gas Departments, including, in addition, further picture galleries and museums for casts on the upper floors, with a special entrance devoted, as it were, to the Feeney galleries. Each of these departments was self-contained, each had its own main entrance and staircase, and at the same time there was easy access between the departments.

There was very little genuine reinforced concrete construction, but he was tempted to believe that buildings of this nature were not entirely suitable to this method of building owing to the alterations required from time to time. Reinforced concrete in floors and roofs was of necessity monolithic, and while it was no difficult thing to cut out a beam with an R.S.J. in it, it seemed to him another matter to cut about reinforced work with the same ease. Externally on the street frontages the buildings were faced to the upper ground-floor level with Aberdeen granite, heavily rusticated with Darley Dale stone for the remainder of the facades. This was instead of Portland stone, which they tried very hard to be permitted to use. The Margaret-street porch was the only place where there was any Portland stone. In the semi-domed porches to Congreve-street and Edmund-street, Hopton Wood stone, with Greek Cippollino marble columns and bronze caps and bases, had been used. The courtyards internally were faced with white glazed bricks, with salt glazed dadoes and bands, etc., accentuating the features. This glazed brickwork—after more than usual trouble and difficulties—had turned out exceptionally well. It would be difficult, he thought, to come across so uniform and good a quality of brick as they would see there. The granite and stone work also exhibited good craftsmanship and material, the general contractors tackling this part of the work very well, also the plumbing both externally and inside the building.

Internally the finishings were of a very simple character—a little interest had been given to the entrance staircases and to the committee-rooms, and one or two of the larger offices, but in the main they had to remember that the building was an office building. In addition to oak and maple batten and block floors, they had made extensive use of linoleum as a floor covering—particularly in the footways to the art galleries and in the panels in the corridors with marble surrounds. The walls and ceilings generally were plastered, and some of the rooms and staircases were panelled out in this material, with certain parts enriched, while oak panelling had been adopted in the committee suites of the Gas and Education departments. The lower part of the Gas Department entrance hall and the dadoes to the main staircases to the other departments had marble linings, echaillon bands, and alabaster fillings to the latter and Hopton Wood stone to the former. The principal staircases also had echaillon treads, risers, and strings. The art galleries were lighted by day on what might be described as the ceiling light principle as against the lantern light. This system was not adopted until exhaustive inquiries and research had been made. Further, they would realise the lantern light presented considerable difficulties of construction, added to which they had very much involved the problem of heating and ventilation. The heating of the building was by low-pressure hot water mechanically circulated—a very simple and trustworthy method. The ventilation was generally for the offices by means of extracts in the rooms into ducts over the corridors, with upcast shafts at intervals, finishing at the top with fan chambers. The art galleries had the glass of the ceiling lights slightly raised on fillets and extract fans in the gables exhaust from the roof spaces. The only downward ventilation was in the large gas office, where a large extract fan adjoined the base of the chimneystack, the foul air being forced up around the smoke flue from the boilers.

As to the difficulties, or hindrances, attending modern building methods, it seemed to him one difficulty was the want of pulling together as it were, at times, of the many apparently inevitable sub-contractors. Too often they did not care one whit for their neighbours, and to blame the other man always appeared to be sufficient excuse. A capable foreman or superintendent could help to obviate a good deal of the friction, but he was often too occupied with looking after his own firm's particular interest, which was not always identical with that of the sub-contractor, whose lot on the job was not always a happy one. Again, another difficulty was that resulting from the necessity of obtaining competitive estimates for every sort and kind of thing. This did not conduce to good work—estimates were cut too fine, with the result that the contractor was unwilling to make the slightest alteration, or improvement, except with the most extravagant claim for extras. All this entailed great trouble and expenditure of time on the part of the architects, which might be employed far more profitably in striving to perfect their work.

Mr. Whitworth Wallis proposed a vote of thanks, and said, as to the bridge in Edmund-street, that the disciples of Ruskin were down on it, and all sorts of criticisms had been passed



Birmingham Municipal Buildings Extension.
Messrs. Ashley & Winton Newman, Architects.

on that part of the structure. Personally, however, he did not care at all what the bridge was outside so long as it was beautiful within, and he could assure them that they had in it one of the most charming entrances to any art gallery he was acquainted with.—Mr. Thornley, of Liverpool, seconded. The motion having been carried, Mr. Newman replied, and defended the bridge as supplying a stone connexion between the old and the new buildings.

ARCHITECTURAL SOCIETIES.

The Leeds and Yorkshire Architectural Society.

A general meeting of the Society was held on Thursday, February 22, the President, Mr. Sydney D. Kitson, in the chair.

The feature of the evening was an exhibition of drawings from the Liverpool School of Architecture, and Professor C. H. Reilly, M.A., A.R.I.B.A., gave an informal lecture on the methods of the school.

The large number of students and members present indicated the considerable interest taken in their work, and the debate which followed the lecture concluded a very interesting and successful meeting.

York and Yorkshire Architectural Society: William Etty, R.A., 1787-1849.

On February 28, before this Society, Mr. G. W. Milburn, of York, read an interesting paper on the "Life and Work of William Etty, R.A., 1787-1849." Mr. A. B. Burleigh, Lic.R.I.B.A., being in the chair. In the course of his remarks he said:—

"In this lovely old city of York, with its memories and associations, the mind is led backward two thousand years, linking together the Early Britons, Romans, Danes, Saxons, Normans, and citizens of to-day. Landmarks, fine buildings, and written records of men and manners have been left to us. Illustrious characters, such as Agricola, Heidrian, Constantine, St. Paulinus, St. Wilfrid, and Alcium for learning; whilst for art the names of Flaxman and Etty stand out conspicuously. Imagine to yourselves York without its William Etty, whose name and beautiful pictures are known and appreciated by every lover of choice and artistic work. His fine style of flesh painting is unsurpassed, whose noble conceptions are of the highest order of merit, and not, I think, unworthy of rank with the greatest masters of antiquity. Such a youth was the son of a York miller, a working printer on a newspaper, a Royal Academician, living a blameless life, who grew to be a kind and gentle old man, and an amicable and generous teacher of York art students. The exquisite sweetness of his expression, his firm and resolute chin, the feature which appears to balance the thought which his mind had conceived; his nose, the born artist's nose gracefully arched and strong, clearly defined—the Napoleonic nose, which adds so much beauty and character to the face; his dark-blue eyes, nestling under the projecting brows, in softened violet-tinted shadows, luminous and bright, watchful and steady eyes.

In speaking of his pictures, Etty was thirty-four years of age when Napoleon died, 1821, and the death of such a mighty military genius would appeal to a sensitive nature like Etty's, and in all probability the outcome of his thoughts was the picture of "The Combat," or "Mercy Pleading for the Vanquished." This ranked as the noblest of Etty's productions, a painting that would do credit to any country; one of the finest of historical talent that the English school had yet produced for accurate drawing and beautiful colouring. From his youth he always thought to be an artist. After serving his apprenticeship as printer on the *Hull Pacquet*, he went to London to stay with his uncle, and later was a student at the Royal Academy schools, and eventually under Sir Thomas Lawrence. He thought long over his pictures, but executed them quickly. He succeeded John Flaxman as R.A. in 1828. He would generally spend the first and second evenings in making a charcoal outline, then go over the sketch with ordinary pen and ink, and then commence to paint. The York School of Design was founded by Etty (and one of the first provincial schools, 1842). It commenced in the Hospitium in St. Mary's Abbey ground, York. Among his first pupils was the family of the Moores. It was a custom of William Etty to take a female Torso, place it in a convenient position, draw it for the students, then add other limbs to complete the figure, and show them how to drape it. He died at York in his sixty-third year. Whilst painting in Venice a Professor came up, and, after looking at Etty's picture, said, "Were I to prick the canvas it would bleed."

At the conclusion of the paper a hearty vote of thanks was proposed by Mr. J. Windass and seconded by Mr. Harold E. Henderson.

Glasgow Architectural Craftsmen's Society.

At a meeting of the Technical College Architectural Craftsmen's Society, Mr. James S. Boyd presiding, Mr. James Muir lectured on the management of Building Contracts. The lecturer stated that a business and architectural training was absolutely necessary to the contractor who was entrusted with difficult and costly work. Thus he would be enabled to give satisfaction to his client and earn profit for himself. The lecturer also dealt with the terms laid down in schedules in adjustment of claims for extras, etc., and stated that no contract of any kind gave satisfaction unless the utmost harmony was maintained between the contractor and those who superintend the works.

A paper was read on the 29th ult. before the Society by Mr. Robert Moon on "Various Timbers and their Practical Uses." The lecturer referred to the rapidity with which supplies of the timbers presently in use were being exhausted, and confined himself mainly to the woods of the future which must come from the giant forests of Western America. These, with the opening of the Panama Canal, should be placed on the British market in greater quantities and at lower rates.

Architectural Association of Ireland.

A general meeting of this Association was held recently in the Lecture Hall, 15, South Frederick-lane. The President, Mr. Page L. Dickens, M.R.I.A.I. occupied the chair. Mr. Connor O'Brien read an interesting paper, entitled "The Development of a National Style of Gothic Architecture in Ireland," which was illustrated by numerous photographs and lantern views of the principal ecclesiastical buildings erected in Ireland between the XIIth and XIVth centuries. Mr. Connor O'Brien found a precedent for the development of a national Gothic style in the work done in Ireland during the XIIIth and XIVth centuries, when great originality of design and independence of treatment were shown by the Irish builders. The lecturer also called attention to the excellent carving and workmanship to be found in many of the tombs and memorials to the dead in our abbeys.

In proposing a vote of thanks to the lecturer, Mr. R. M. Butler, M.R.I.A.I., suggested as an explanation of the great difference in detail and treatment often to be found in buildings of the same period in Ireland that many of these buildings owed their erection to the English colonists, and so naturally differ in their details and mouldings from those built by the Irish people.

Mr. Geo. L. O'Connor briefly seconded the vote of thanks, which was supported by Mr. P. J. Lynch, M.R.I.A.I., and Professor Scott.

GENERAL NEWS.

Professional Announcement.

Mr. Drinkwater Butt, F.R.P.S., architect and studio specialist, has removed to No. 2, Margravine Studios, Baron's Court, W.

Mr. Pierpont Morgan's Collection.

As was provisionally announced on February 2, the silversmith's work forming part of the collections lent by Mr. Pierpont Morgan to the Victoria and Albert Museum is the second portion of that collection being withdrawn.

The Galilee Chapel at Durham.

The Council of the Durham College have, it is stated, been warned by the Dean and Chapter of Durham Cathedral that the condition of the Galilee Chapel is such as to render its use unsafe, and the daily services will be held in the nave of the Cathedral.

Peabody Buildings.

From the forty-seventh annual Report of the Governors of the Peabody Donation Fund we read that the surplus income for the year, from rents and interest, was 43,551*l.* 17s. 5d., as shown by the accounts, this return being 2·53 per cent. on the capital of the Fund, against 2·36 per cent. last year. The nine blocks of self-contained tenement buildings at Camberwell-green have been completed, and are fully occupied. Good progress has been made with the twelve blocks of self-contained tenement buildings at Lillie-road, Fulham. It is hoped they will be ready for occupation early in the summer. Building operations will be commenced at the Vauxhall Bridge-road site in February and at the Walworth site in the autumn. Coal sheds have been erected on thirteen of the estates, and the amount of coal sold to the tenants, at 1s. per cwt., during the year, was 2,581 tons. At the end of the year the Governors had provided for the artisan and labouring poor of London 14,312 rooms, including those occupied by the superintendents and porters, besides laundries and lavatories. These rooms comprised 6,020 separate dwellings—viz., 300 cottages of five rooms, eighteen tenements of five rooms (superintendents' quarters), 129 tenements of four rooms, 1,952 of three rooms, 2,658 of two rooms, 954 of one room, and nine shops with seventy-one rooms attached. The architect to the company is Mr. Victor Wilkins, Adelphi, W.C.

The East End Dwellings Company.

In submitting the report and accounts to the twenty-ninth ordinary general meeting of the East End Dwellings Company the directors state that the rents received in 1911, without taking into account Hastings Houses and the Victoria Park-square Estate (old property), were 36,593*l.* 16s. 1d., as against 36,098*l.* 13s. 3d. in the previous year. Hastings Houses, which were acquired in August, 1910, show excellent results and were completely occupied at the end of the year, as were also Stafford Houses, Thornhill Houses, and the Globe-road Cottage Estate. The letting of the block buildings in and near Victoria Park-square somewhat improved, the unlet tenements on December 31 being fifty-nine against seventy-two at the end of 1910. Including 646*l.* 8s. 9d. brought forward from 1910, the profit and loss account shows a credit balance of 13,541*l.* 16s. 7d. Out of this sum 3,000*l.* (as against 2,000*l.* for 1910) has been carried to reserve, which now amounts to 59,000*l.*, and interim dividends for the first half of 1911, at the rate of 4*l.* and 5*l.* per cent. per annum on the preference and ordinary shares respectively, have been paid. The directors now recommend a similar distribution for the half-year ending December 31, 1911. After allowing for these dividends, and also for directors' and auditor's fees, a balance of 836*l.* 0s. 7d. will remain to be carried forward.

Property Sales.

Recent sales comprise "Kelston," Netherhall-gardens, South Hampstead, which was built after Mr. R. Norman Shaw's designs for the late Edwin Long, R.A., and has been purchased by Sir Edward Elgar, O.M.; No. 26, Park-lane, erected for the late Mr. Alfred Beit in 1895-6 from the designs of the late Colonel Eustace Balfour and Mr. Thackeray Turner; and Burford Priory, Oxfordshire, bought by Mr. E. J. Horniman, L.C.C., which is depicted by Waller in his picture of "The Empty Saddle." The Priory represents the St. John's Priory, appurtenant to the wealthy Abbey of Black Canons, at Eynsham, dedicated to the Virgin and SS. Peter and Paul, and founded in or about 1170 by William, Duke of Gloucester. Edward Harman built, shortly after the Dissolution, the house which Sir Lawrence Tanfield, Chief Baron of the Exchequer, 1607, bequeathed, with the manor, to his grandson Lucius Carey, Viscount Falkland, who fell at Newbury, having previously sold the estate to Speaker Lenthal; Lenthal enlarged the house and built the chapel. Colonel B. de Sales La Terriere made many improvements and restorations; in the garden is a fine Jacobean summer-house, and at the Home Farm are Kitts' Quarries, which supplied some stone for the interiors of Westminster Abbey and St. Paul's. Amongst the properties recently placed in the market are Weavers' Hall, Basinghall-street, rebuilt in 1856 for the Company, and now let in suites of offices at an aggregate rental of

1,503*l.* 10s. per annum; "Belmont," Mill Hill, Vicar's Hill, Lymington, Hants, and No. 33, Bedford-square, W.C., built and decorated originally by the brothers Adam; the Rougement Estate, Exeter, embracing portions of the old castle moat and city walls; Blair Drummond, Perthshire, 7,425 acres, a seat for some centuries past of a branch of the house of Drummond; and Ancaster House, Richmond-hill, having a main frontage of 200 yds., close to the Park gates (1798), which, originally a shooting-box of the Duke of Ancaster, was given by George III. to Sir Lionel Dayrell.

Woman and the Cold House.

Under this heading the *Ironmonger* for January 27 makes some comments on the correspondence in the Press on the subject of cold houses, concluding with the following remarks :—"The outstanding point about the correspondence is the interest evinced by women in the question and the total absence of any reference to our ancient friend the 'cheerful British fire.' Time was when we thought our architects might learn to appreciate the advantages of central heating in the home. We even dared to hope that they would lend their aid to convert the womenfolk, but now the tables seem likely to be turned. The scant attention given by the architectural profession to Mr. Barker's recent lectures, which were addressed particularly to them, the marked preference they display as a class towards plumbers as distinguished from hot-water fitters, and the general neglect of the problem of warming in the 'Home and House' books which have been such a feature of the publishing trade during recent years, almost lead us to despair of any improvement in that quarter. Those who can influence public opinion might do worse than try to capture the Press which appeals especially to women. Make the housewives of this country believe they can save money, spare their servants work, and preserve the decorations of their rooms by insisting upon a better system of warming than that now in common use, and they will demand such a system. Then the architects will have to obey."

London Institution, Finsbury-circus.

In a "Note" on December 8 we adverted to the contemplated adaptation of the premises of the London Institution for purposes of a School of Oriental Languages, and gave a short historical account of the Institution and its buildings. A formulated scheme has been since approved by the Government, and the Board of Proprietors have unanimously adopted a Report to be issued to the general body of proprietors and members. Subject to the passing of a special Act of Parliament, the scheme provides for the establishment of "The London Institution for Oriental Languages," by royal charter, and under the control of a fresh governing body; the transfer of the freehold property and effects, and discontinuance of the existing circulating library; for grants from Government of from 20,000*l.* to 25,000*l.* for repairs, improvements, and additional buildings, and for an annual income, towards which the Government have agreed to contribute 4,000*l.* per annum. Professor F. M. Simpson has prepared plans for altering the premises, at a cost of some 25,000*l.*, in furtherance of these proposals.

University Buildings, Belfast.

The authorities have resolved to proceed forthwith with the enlargement, at an estimated cost of some 10,000*l.*, of the Queen's University Library, after designs by Mr. W. H. Lynn, R.H.A., of Belfast, Architect to the University. Mr. Lynn made the plans and designs for the additions to the students' union block and to the medical school, and for the new south block, as well as for the drill hall and rifle range, Queen's University, for which tenders, to an aggregate sum of nearly 35,000*l.*, were accepted in July of last year.

CORRESPONDENCE.

The Associates and the R.I.B.A.

SIR,—Your article, "The Associates and the R.I.B.A.," induces me to submit the following statements :—

(1) Many Associates desire to remain Associates because the title indicates something which is perfectly clear and definite. They have passed an examination in architecture. This examination may be feeble, and parts of it may be absurd, still, Associateship indicates definitely and clearly that an examination in architecture conducted by a Royal Institute has been passed.

(2) Fellowship may, some day, indicate something just as clear and definite and something far more important than the passing of an examination, but at present it does not. It indicates all kinds of interesting things, but nothing clear and definite.

(3) The Associate who has qualified for Fellowship by having been engaged as a principal for seven years knows that at any time, should it be to his interest to do so, he may become a Fellow, and for this reason, and for those given in (1) and (2), he remains an Associate.

(4) When the Institute tackles the question of architectural education and examination seriously it will discover—what it discovered in part long ago—that while the present examinations for Associateship can be made vastly sounder and improved in many directions, they can contain nothing to which a great learned society should refer to as "advanced work."

(5) It may then be thought advisable to make the doing of some "advanced work" necessary before an Associate who has already "shown himself to be possessed of a solid groundwork of knowledge" may proceed to a Fellowship.

It is not possible in a letter to deal in detail with the nature of this "advanced work." It should be something more than "having been engaged in practice as a principal for seven years"—in fact, as suggested in your article, it should be possible for a man to become a Fellow without having engaged in practice.

The following may be suggested as types of "advanced work" :—

(*a*) The designing and carrying out of buildings which can reasonably be considered to add to the beauty of one or more of our villages, towns, or cities.

(*b*) The investigation of some of the scientific problems which are inseparable from architecture.

(*c*) The doing of work which will add to our knowledge or understanding of the architecture of the past or which will enable us to grasp more clearly the elusive quality of beauty in architecture.

(6) If such a scheme as that I have indicated were carried out in the right spirit, in the course of, say, twenty to thirty years, it would be decidedly worth while for an Associate to strive for the Fellowship, for then the letters F.R.I.B.A. would be as valuable to the architect as the letters F.R.S. are to a scientist.

And, I suppose, being known as F.R.S. is, to the scientist, almost as good as being known by his surname alone, which is, after all, the greatest distinction it is possible for a community to give to one of its members.

W. S. PURCHON.

Padbury *v.* Holliday, Ltd.

SIR,—The letter of your correspondent, Mr. F. J. Gayer, has again opened up the differences between the contractor and the sub-contractor.

Your correspondent suggests that a proper contract between the parties is necessary. That is agreed; but the original contract should form the basis of agreement. Is the contract he wishes to put in force the one issued by the Institute of Builders, which stipulates that the contractor shall be judge of the specialists' manufactures with power of rejection and with other clauses placing him in the grip of the contractor, finally providing that the contract shall override the principal contract and referring dispute to the arbitrament of the President of the Institute of Builders or someone appointed by him? No, Sir. The sub-contractor prefers that the architect shall hold the balances fairly against all parties, and rightly objects to being placed at the absolute mercy of the contractor who may be, and often is, more or less of a financial corporation, squeezing and greedy for discounts, or, as is sometimes the case, men without means trading on advances due to the sub-contractor.

Sub-contractors, in the vast majority of cases, have, by business enterprise, laborious study of the special manufactures in which they are interested, and at an enormous expense in the development of a high standard of perfection, rightly come to the front. To them, and to the appreciation of their efforts by the architectural profession (whose ideas they so readily carry out), is due the wonderful improvements in modern building which makes for comfort and economy. Take, for example, reinforced concrete, constructional ironwork, heating, sanitation, ventilation, and like matters. How many of the improvements have been brought about by builders?

A glance at the advertising pages of this journal will at once show that building specialists are a real live force, of standing and credit, and it is not likely that they will consent to be placed under the heel of the contractor.

In many buildings of the best description where a client employs his own labour, under the directions of an architect, and a general contractor is dispensed with entirely, the work proceeds smoothly; the client gets good value too, as the specialist can quote his best prices—with no margin for discounts and uncertainty of payment—and the work is properly carried out to the satisfaction of everyone.

These are days of organisation, and it is time that sub-contractors formed an association for the protection of their interests.

SUB-CONTRACTOR.

Thames Flooding.

SIR,—Whether flooding in the upper reaches of the Thames is preventable in normal years is obviously a question for engineers. The Thames Conservancy have complete data for the rainfall over the area drained by the river, and the volume of water passing down per second can be easily gauged at the weirs. Were the numerous artificial barriers in the form of locks and weirs, intended to retard the flow, thrown open, the Thames would become an impetuous torrent, as when its extensive beds of gravel were forming, instead of a navigable river. By manipulating the barriers scientifically it would seem that floods should become impossible. Alternatively to raise the banks where they are exceptionally low, dredging the material in part from the river bed, would present no vast difficulty or cost, and have been long since carried out had the Thames been an Indian or Egyptian river. In the meantime each township might reasonably follow the example of Windsor and places below Teddington, and protect themselves. The Town Council of Maidenhead, however, allow an overflow from Cookham to pour into the low-lying quarters of the town, which are inhabited by the poor, whose tenements are submerged annually, bringing unspeakable misery for the time on them, with hopelessly insanitary conditions. A second torrent pours over the tow-path above Boulter's lock, at a point where it is exceptionally low, and devastates the gardens of Maidenhead Court, Wray Park-avenue, etc., for nearly a mile before it re-enters the river near the bridge. Year after year the town is held up as an object-lesson by the London Press in a manner most damaging to its residential repute, and it might be thought that self-interest, if nothing higher, would induce the leading tradesmen on the Council to set about a remedy; the more so as it would involve a relatively small outlay. The required embankments are, in fact, by no means extensive or costly. But their discussions, as reported, are inconclusive and abortive, and for years have had no practical results, and no wonder! One Councillor's dictum is that "they knew perfectly well that all the wise men on earth would never keep out the water from Maidenhead as long as the present levels exist," while another objected to any embanking "for the reason of the inconvenience it was likely to cause to the people residing at Bourne End." It is a strange state of things that "Aldermen" and "Councillors" should be found within half-an-hour of the metropolis, in these Board School days, discussing so serious, but really so simple a matter in such a spirit. A trip to Holland, or even to the Nore or the East-end, would afford ample object-lessons as to the value of embankments. Further comment is unnecessary, but it is evident that some higher authority should exist, capable of bringing these gentlemen to a sense of their obligations.

J. STARKIE GARDNER.

EDITORIAL SUMMARY.

Our leading article, "Hospital Competitions," deals with an article in the last issue of our contemporary, the *Hospital*, as to Hospital Competitions in general and the recent East Sussex, Hastings, competition in particular. We quote at length from our contemporary on another page (p. 279).

"The Text-Book" is the title of a second article (p. 260). It is a review of Professor F. M. Simpson's recent work on "A History of Architectural Development: Vol. III.—the Renaissance in Italy."

In "Notes" Column (p. 262) will be found comments on: "The Lady Architect Again"; "Associates and the R.I.B.A."; "The Attitude of the Associates"; "The Hampshire Association of Architects"; "Publication of Speeches in the R.I.B.A. *Journal*."

An illustrated report of the lecture at Carpenters' Hall by Mr. W. H. Bidlake, M.A., on "Mediæval Sculpture" appears on p. 263.

"Industrial Unrest" is the title of an article on p. 265.

Some notes on the opening up of Southwark Cathedral are given on p. 265, together with an illustration.

An abstract of a lecture on "The Restorer and his Attitude toward Old Work" is given on p. 266.

Some notes on the Birmingham Council Chamber Extension will be found on p. 267.

Architectural Societies (p. 268) include: "Glasgow Architectural Craftsmen's Society"; "Architectural Association of Ireland"; "York and Yorkshire Architectural Society"; "Leeds and Yorkshire Architectural Society."

In Correspondence columns (p. 269) will be found letters on: "The Associates and the R.I.B.A."; "Thames Flooding"; "Padbury *v.* Holliday, Ltd."

The Monthly Illustrated Review of Construction (p. 271) contains: "The London Opera House"; "A New System of Reinforced Brick Flooring"; "New Offices for the Metropolitan Railway"; "Ventilation"; and Notes.

The Building Trade Section (p. 275) includes: "Manchester Building Trades' Exhibition"; "London Master Builders' Association"; "Portsmouth Master Builders' Association"; "Projected New Buildings in the Provinces"; "Applications under the London Building Acts," etc.

Book Notices (p. 281) include: "Baroque Architecture and Sculpture in Italy"; "Old Houses of Shrewsbury"; "Our Homeland Churches and How to Study Them"; "The Year's Art"; "The Antiquary," etc.

In Legal Column (p. 282) will be found some observations on: "Workmen's Compensation" and "London Drainage By-Laws."

In Law Reports (p. 282) will be found: "John Aird & Co. *v.* The Corporation of Bristol."

MEETINGS.

FRIDAY, MARCH 8.

Royal Sanitary Institute.—Provincial sessional meeting, Municipal School of Technology, Sackville-street, Manchester. (1) Discussions: "The Application of the Housing and Town Planning Act to the Redevelopment of Suburban Areas now in Process of Transition," to be opened by Mr. F. W. Platt, building surveyor, Salford; (2) "The Quantity of Water Available from Upland Drainage Areas," to be opened by Professor J. Radcliffe, M.Sc.Tech. The chair will be taken at 7.30 p.m. by Mr. H. Percy Boulnois, M.Inst.C.E., Chairman of the Council of the Institute.

Leicester and Leicestershire Society of Architects.—Mr. Walter Gilbert on "Metalwork." Lantern illustrations. 8 p.m.

Royal Academy of Arts.—Mr. A. P. Laurie, M.A., D.Sc., on "The Chemistry of Building Stones and Cements." 8 p.m.

Royal Sanitary Institute.—Mr. Edward Willis, Assoc.M.Inst.C.E., F.S.I., on "Building Materials." 7 p.m.

SATURDAY, MARCH 9.

Royal Sanitary Institute.—Members meet at St. Margaret's Church, Prestwich, at 1.45 p.m., and proceed to inspect the new service reservoir at Heaton Park, under the guidance of the resident engineer. 3 p.m.—The party will proceed to the new lake to inspect the works.

Royal Institution.—Professor Sir J. J. Thomson, M.A., LL.D., D.Sc., F.R.S., on "Molecular Physics"—III. 3 p.m.

Builders' Clerks' Benevolent Institution.—Theatrical performance at the Royal Court Theatre, Sloane-square, by the "Strolling Players" Dramatic Society, in aid of the funds of the Institution.

MONDAY, MARCH 11.

Architectural Association.—Mr. C. C. Brewer and Mr. C. A. Daubney on "American Architecture." 7.30 p.m.

The Surveyors' Institution.—8 p.m.

Royal Sanitary Institute.—Mr. H. Phillips Fletcher on "Building Sites and Local Physical Conditions." 7 p.m.

Institute of Sanitary Engineers.—Mr. Percival M. Fraser on "The Modern Home." 8 p.m.

The Incorporated Clerks of Works' Association (Carpenters' Hall, London-wall).—Paper by Mr. H. Fincham on "Canterbury Cathedral." 8 p.m.

TUESDAY, MARCH 12.

Royal Sanitary Institute (90, *Buckingham Palace-road*).—Mr. R. Herzfeld, Ph.D., on "Combined Hot-Water and Electricity Supply for Private Houses." The chair will be taken at 8 p.m. by Sir William Emerson, F.R.I.B.A.

Northampton Polytechnic Institute (Illuminating Engineering).—Mr. Val. H. Mackinney on "The Practical Use of Metallic Filament Glow Lamps." 7.30 p.m.

The Institution of Civil Engineers.—Discussion on "Roller and Ball Bearings" and "The Testing of Anti-friction Bearing Metals," by Professor John Goodman, M.Inst.C.E. Papers on "The Main Drainage of Glasgow," by Alexander Beith McDonald and Gotfred Midgley Taylor, MM.Inst.C.E.; "The Construction of the Glasgow Main-Drainage Works," by William Cecil Easton, B.Sc., M.Inst.C.E.; "Glasgow Main Drainage: The Mechanical Equipment of the Western Works and of the Kinning Park Pumping-Station," by David Home Morton, M.Inst.C.E. 8 p.m.

WEDNESDAY, MARCH 13.

Carpenters' Hall, London-wall (*Lectures on Arts Connected with Building*).—Mr. W. Curtis Green on "Roofs and Roofing." 7.45 p.m.

Royal Society of Arts.—Professor Ernest A. Gardner, M.A., on "Greek Sculpture." 8 p.m.

Royal Sanitary Institute.—Mr. H. Phillips Fletcher on "Building Construction and Sanitary Planning." 7 p.m.

Edinburgh Architectural Association.—Mr. F. C. Eeles on "The Gothic Chancel." 8 p.m.

THURSDAY, MARCH 14.

Carpenters' Hall, London-wall.—Mr. A. G. Temple, F.S.A., on "J. M. W. Turner, R.A." 8 p.m.

Society of Antiquaries.—8.30 p.m.

The Concrete Institute.—Discussion on the Interim Report of the Tests Standing Committee of the Concrete Institute on "The Testing of Concrete, Reinforced Concrete and Materials Employed Therein." 8 p.m.

FRIDAY, MARCH 15.

Institution of Mechanical Engineers.—Dr. Rudolf Diesel on "The Diesel Oil Engine." 8 p.m.

Royal Sanitary Institute.—Mr. H. Phillips Fletcher on "Ventilation, Warming, and Lighting." 7 p.m.

Glasgow Architectural Craftsmen's Society (Technical College).—Mr. A. H. Purdie on "Some Practical Considerations on the Measuring and Valuing of Mason and Brickwork."

South-Western Polytechnic Institute, Chelsea.—Sir David Gill, K.C.B., F.R.S., will present prizes and certificates to students of Evening Classes and Day College. 8 p.m. (Laboratories and workshops open to public inspection at 9.15 p.m.)

COMPETITION NEWS.

Oakwood-avenue Council School, Warrington.

Members and Licentiates of the Royal Institute of British Architects are asked not to take part in this competition because the conditions are not in accordance with the published regulations of the Royal Institute for architectural competitions.

Blackwood Hall.

Members and Licentiates of the Royal Institute of British Architects are asked not to take part in this competition because the conditions are not in accordance with the published regulations of the Royal Institute for architectural competitions.

Town Planning in Huddersfield.

Mr. W. P. Raynor, J.P., has addressed a letter to the Chairman of the Housing and Town Planning Committee of the Huddersfield Corporation stating that he is authorised to pay over 100*l.* to be devoted to acquiring by open competition a scheme of planning and housing applicable to the local needs. The matter is under the consideration of a sub-committee.

ENGINEERING SOCIETIES.

The Society of Engineers.

The Council of the Society of Engineers (Incorporated) may award in 1912 two premiums of books or instruments to the value of 8*l.* 8s. and 4*l.* 4s., as first and second prizes respectively, for approved essays on the subject of "How to Improve the Status of Engineers and Engineering, with Special Reference to Consulting Engineers." The Council reserve the right to withhold either or both of the premiums if the essays received are not of the required standard of merit. The competition is open to all, but application for detailed particulars should be made to the Secretary before entering. The last date for receiving essays is Friday, May 31.

The Junior Institution of Engineers.

A booklet has been issued by this Institution dealing with "Its Origin and Aims." In the paragraph dealing with the inception of the Institution it is interesting to note that the Society came into being at the works of the late firm of Messrs. Maudsley, Sons, & Field, London, in 1884. Amongst the officers, Presidents, and Vice-Presidents the names of many famous men can be noticed in the list that is given. Mention is made also of honorary members, one of whom generally gives a lecture each year, many of the discourses thus delivered having merited and obtained world-wide renown. The rooms are kept open on Friday evenings during the months of October to May inclusive, in order that the weekly periodicals can be perused and social intercourse promoted. In connexion with each Friday evening the opportunity is taken for the discussion of various subjects in a very informal sort of way. A copy of the booklet may be obtained free on application to the Secretary, 39, Victoria-street, Westminster, London, S.W.

BOOKS RECEIVED.

AMATEUR JOINERY IN THE HOME. By G. A. Audsley, LL.D., and B. Audsley. (London: Geo. Allen. 4s. 6d. net.)

BYWAYS IN BRITISH ARCHÆOLOGY. By Walter Johnson, F.G.S. (London: Cambridge University Press. 10s. 6d. net.)

SMALL WATER SUPPLIES. By F. Noel Taylor. (London: B. T. Batsford. 6s. net.)

ILLUSTRATIONS.

The London Opera House.

THIS imposing building in Kingsway is illustrated by two of our plates, and is described partially in the article beginning on p. 271, where other illustrations will be found.

Mediæval Sculpture.

THESE illustrations are given in connexion with the lecture by Mr. W. H. Bidlake, M.A., on "Mediæval Sculpture" at Carpenters' Hall, a report of which appears on another page.

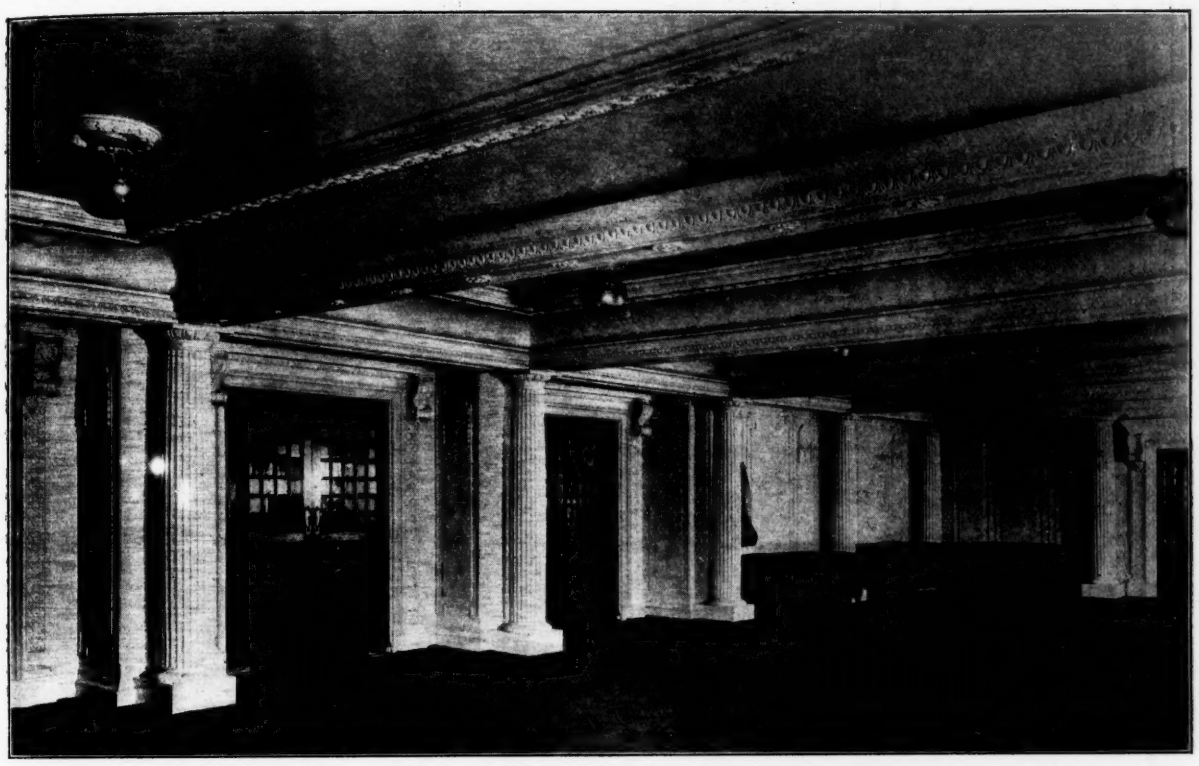
FIFTY YEARS AGO.

From the *Builder* of March 8, 1862.

American Liberality.

WE learn that Mr. Peabody, the well-known American banker in England, being about to quit the country with a large fortune realised here, has decided on erecting a number of houses for the working class who, through the innumerable improvements in the metropolis, have been rendered almost homeless. For this purpose he gives a hundred thousand pounds, and also undertakes to pay the first year's interest of the money—five thousand pounds.

MONTHLY REVIEW · *of* · CONSTRUCTION.



The Stalls Saloon.

THE LONDON OPERA HOUSE.—I.

GENERAL DESCRIPTION.

SITUATED near the southern end of Kingsway, the new opera house built for Mr. Oscar Hammerstein from the architectural designs of Mr. Bertie Crewe stands on an island site with frontages of 264 ft. to Kingsway, 120 ft. to Portugal-street, 37 ft. to Sheffield-street, and 90 ft. to Sardinia-street, while part of the building abuts on the premises of the Strand Board of Guardians.

The selection of the site, covering an area of nearly 25,000 sq. ft., indicates due appreciation of the fact that an important theatre or opera house should be placed so as to be readily accessible from all sides. Every advantage has been taken of the four street frontages in arranging the entrance and exit doors. The house can be emptied in three minutes, and hundreds of carriages can be accommodated in the surrounding streets.

The exterior of the building is treated somewhat in the French Renaissance style, the main façade being divided into two stories, each nearly 40 ft. high. The lower story is heavily rusticated, and the lines of the upper story are broken by coupled Corinthian pilasters, the carved capitals having square volutes. A prominent feature of this façade is a central window 39 ft. high.

The Kingsway elevation, as well as return elevations of 50 ft. on Portugal-street and Sardinia-street, are based on a plinth of Norwegian grey granite rising to the height of 7 ft. above pavement level, supplied and worked by Messrs. A. & F. Manuelle, of 57, Gracechurch-street, E.C. The corresponding façades are of Portland stone from the Coombefield quarries of the Bath and Portland Stone Firms, Ltd., of Bath. More than 60,000 cubic ft. of worked stone were supplied by the company, some of the blocks weighing upwards of 8 tons each.

The remaining façades of the building are in dark cherry-red facing-bricks with stone dressings, string courses, and cornice. These bricks, supplied by Messrs. T. Lawrence & Sons, of Bracknell, are made from a bright-coloured clay found among the Bagshot sands, and giving the rich tint by which they are characterised.

Upon the main cornice on the Kingsway front twelve statues have been placed under the direction of the sculptor, Mr. Thomas Rudge, of Clapham. At one end of the building a group of three figures represents "Melody," while at the other end "Harmony" is similarly represented. The central figures are about 14 ft. high, and the weight of each group is fully 40 tons. Over the central window there are two seated figures representing "Inspiration" and "Composition," and four other single statues denoting "Comedy," "Tragedy," "Song," and "Dance," are disposed at suitable intervals on the cornice. These statues weigh about 15 tons each, some of them comprising two and others three blocks of stone.

An auxiliary structural feature of the Kingsway front is the wrought-iron glazed verandah extending over the street pavement for the shelter of persons entering or leaving the building.

From the foregoing particulars the reader will be able to gather a general idea of the structural aspect of the exterior, and from the accompanying illustrations to form an opinion of its architectural merit.

The main entrance is at the south end of the Kingsway front, a flight of marble mosaic steps leading thence to the vestibule and booking offices. The entrance vestibule has an arched imitation stone coffered ceiling to match the stone arch outside. Over the door a large panel is covered by an oil painting of Pan attended by maidens. The entrance hall, arranged as a lounge, measures 60 ft. long by 30 ft. wide by 21 ft. high, and is surmounted by a peristyle of Corinthian columns supporting a heavily-beamed and coffered ceiling. The walls are handsomely panelled in plaster, the panels being decorated by medallions representing eminent musical composers. From the entrance hall two marble staircases lead down to the stalls on the floor below, and a marble-panelled stairway gives access to the grand circle and galleries.

The interior of the house may be considered as divided into three portions:—(A) Comprising entrance hall, stairways, corridors, saloons, and other accommodation for the public on several floors; (B) the auditorium, including the stalls, box tier, grand circle, lower gallery, and upper gallery; and (C) consisting of the stage, scenery dock, dressing-rooms and accommodation for the management, staff, and artistes.

In part (A) on the floor below the street level are the foyer and saloon attached to the stalls and boxes on either side of them, and approached by the staircase already mentioned. The stalls saloon has a series of eighteen Grecian columns with heavy cornices and panelled walls, and doorways in the same style. On the ground floor similar accommodation is provided in connexion with the boxes on the first tier, while a private entrance has been arranged for the Royal box. This box is constructed with sliding partitions so that its dimensions can be varied as required. The walls are panelled in silk, with gilt medallions at the crown of the panels, having miniatures of paintings in the Watteau style. The crush hall for the box tier has a cove strap pattern ceiling extending across the whole width of the building; the cornice is a very effective piece of work, and the walls are divided up into panels by pilasters. On the grand circle level a lounge, foyer, and saloon are to be found, the last being an oval-shaped chamber with a domed an coffered ceiling, having fine ornamental frieze and the centre heavily enriched with fruit in plaster. The Grecian doorways constitute an excellent example of plaster work. Above the circle foyer are the lower and upper gallery saloons. All the apartments mentioned, as well as the corridors, stairways, and other accommodation, have been designed with much care for the comfort and, above all, the safety of the public, and in these respects the new opera house will quite bear comparison with the best examples of French theatre architects. The circle is heavily moulded with a large oval; the walls are panelled with cupid drops at intervals; there is also an alcove with Corinthian columns and ornamental niches. The decorative work, as described above, in the vestibule, entrance hall, crush hall for box tier, stalls saloon, grand circle and circle saloon was executed by Messrs. John Tanner & Son, of Liverpool, and 45, Horseferry-road, Westminster, S.W.

The Domed Saloon (Doorway to Exit Corridor).

The auditorium proper is 85 ft. wide by about 100 ft. long, the length varying on the different circles. Below the street level the space available is devoted entirely to stalls and eight private boxes on either side; the floor sloping upward from the orchestra at such inclination that the occupants on every row of seats have an unobstructed view of the stage. At the entrance level there is a semicircular tier of private boxes, each with a retiring-room, including the Royal box and suite of apartments placed at the O.P. side of the proscenium in order that direct access may be obtained from the Royal entrance on Kingsway. Two other ranges of private boxes are situated on the same level, one on each side of the auditorium.

Above the box tier is the grand circle, with fourteen tiers of seats and eight boxes at the sides; the lower gallery with eleven tiers of seats and six boxes; and the upper gallery with eleven tiers of seats.

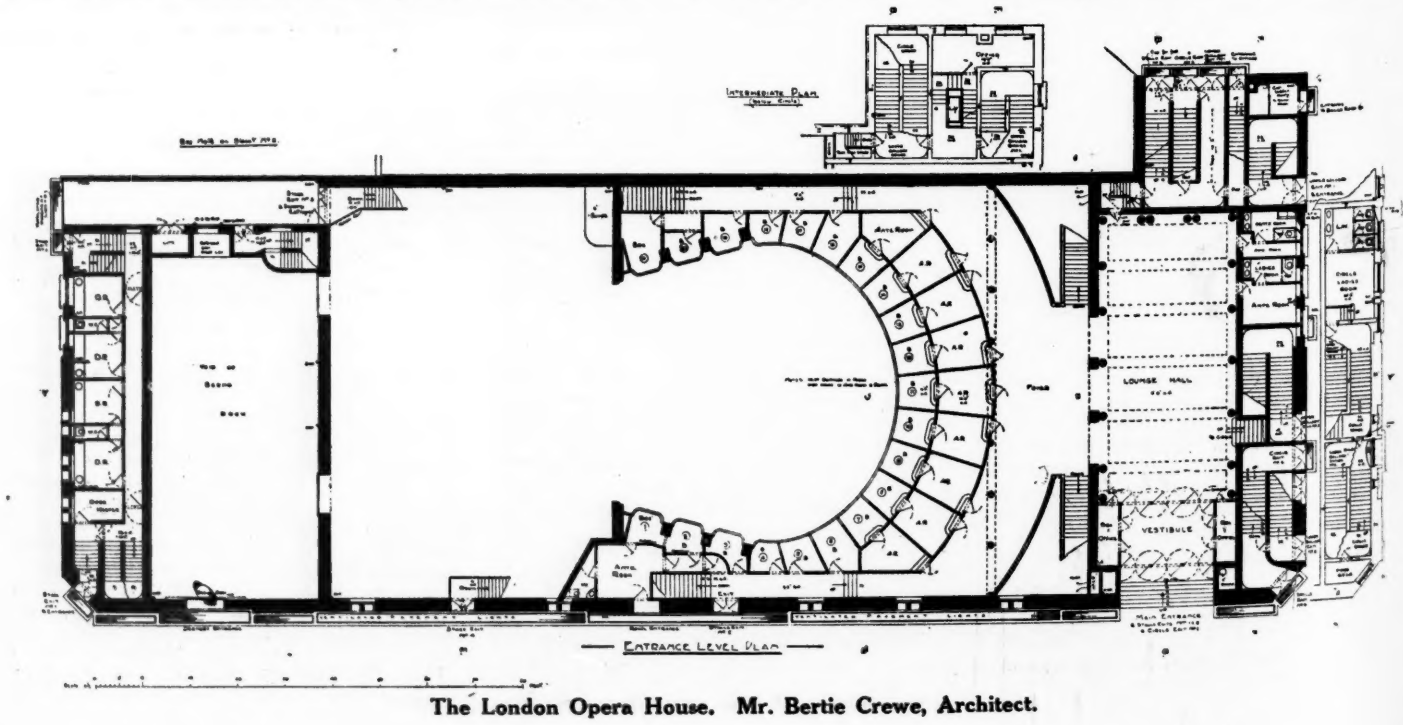
The auditorium is constructed entirely of fire-resisting materials. The circles and roof are of steelwork and concrete; all doors are of hardwood, self-closing and smoke-proof, and the proscenium opening is fitted with a safety curtain, built of steel and asbestos, which in case of fire will be lowered and automatically flooded with water. As additional precautions, an automatically-opening lantern light has been provided in order to draw away heated air and smoke from the stage in the event of fire, while hydrants and other fire-fighting appliances have been placed in every part of the building.

The auditorium is unusually comfortable, every seat throughout the house being a fauteuil; no columns obstruct the view of spectators, and the sight lines have been carefully studied. Promenades have been entirely avoided in the auditorium proper, and enclosing walls have been erected behind the circle and galleries to improve the acoustics of the house and to prevent the audience from being disturbed by sounds from the adjoining portion of the building. The total capacity of the house is 3,000, which compares favourably with the seating accommodation of other buildings of the same class in the metropolis.

The proscenium arch is 45 ft. wide by 30 ft. high, with a funnel-shaped profile intended to throw out sound, and the auditorium is covered by a rather flat, elliptical ceiling. All exits are readily accessible, and the doors are of the full width of the corridors into which they lead.

The stage is 84 ft. wide by 60 ft. deep, and the distance from front to back can be increased to nearly 100 ft. in case of need by throwing open the partition closing the front of the scenery dock situated immediately behind the stage proper. In the same part of the building are situated dressing, chorus, and other rooms all well lighted and having access to the open air for ventilation purposes.

From the structural point of view the London Opera House is essentially a masonry building, in which steel has been largely used in the form of framing for floors, circles, and roofs. The steel construction, as well as the electric light, heating and ventilation, and other installations, present features of interest to which attention will be directed in our next issue.



The London Opera House. Mr. Bertie Crewe, Architect.

NEW SYSTEM OF REINFORCED BRICK FLOORING.

As HITHERTO constructed reinforced brick floors consist of separate panels placed between and supported by rolled steel girders and joists, the reinforcement consisting of steel strip embedded in the vertical joints, which are made with Portland cement mortar. Numerous floors have been so built with perfect success from the standpoints of strength, stability, and resistance to vibration, sound, and heat.

An improvement recently introduced by the

Kleine Patent Fire-Resisting Flooring Syndicate embodies a form of design where the steel girders and joists and the reinforced brick floor panels, instead of acting separately, are combined so as to act together, the steel offering resistance to tension and the reinforced brickwork withstanding compression.

One advantage gained by this arrangement is that the rolled-steel members are very much smaller than would be the case if they were employed in the customary manner. Thus a considerable saving can be effected in respect of steel, and at the same time the combination beam is far more rigid and offers greater resistance to fire than the girder or joist of steel alone, even if the latter is protected by fire-resisting casing of the usual character.

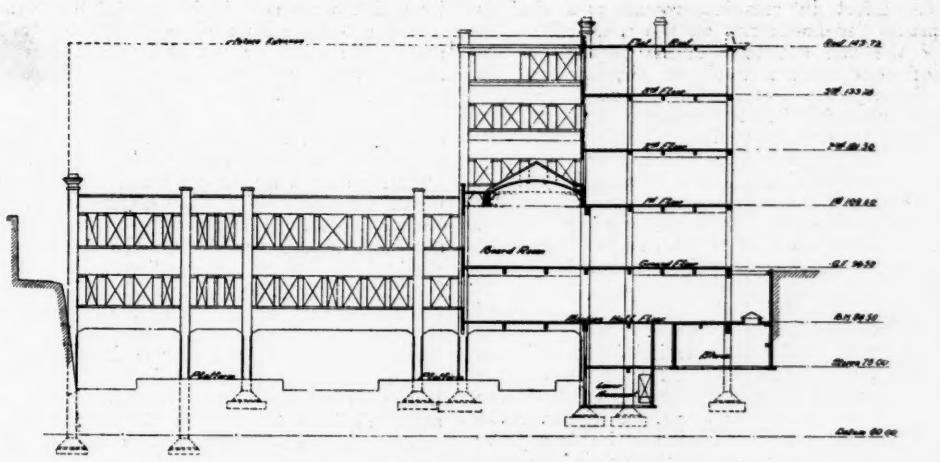
Figs. 1 to 4 illustrate typical forms of the new flooring. By Figs. 1 and 3 it will be seen that an ordinary I-beam is embedded in the web of a T-beam with curved haunches, the web and flange of the beam consisting of hollow porous bricks with closed ends, and of concrete which is filled in between and around the bricks, except in the case of the two bottom bricks placed around the lower flange of the embedded I-beam. The soffit of the floor is completed by porous brick tiles giving a flush ceiling with brick face, which may be left exposed in industrial buildings or plastered in buildings where decoration is essential.

Figs. 2 and 4 are sections of the beams shown in the other two drawings, but are taken through the transverse joints, these being of width sufficient to permit the floor slab to be adequately reinforced by round rods and the ends of these rods to be carried into and anchored in the haunched web of the T-beam formed.

Inasmuch as floors composed entirely of reinforced brick have already proved their capacity for withstanding heavy loading with perfect safety, it is evident that the floor slabs illustrated by Figs. 1 and 3 must be still stronger in consequence of the wider joints and the mass of concrete around the bricks. Moreover, their resistance is increased by the application of transverse reinforcement in addition to the longitudinal reinforcement used in brick floors of the previous type. Consequently the floor slab is quite capable of being designed so as to constitute an efficient flange to the T-beam represented in the sections, and it may be noted that, if necessary, compression reinforcement can be introduced into the web and flange of the construction.

As the new type of beam is based on the same general principles governing the design of reinforced concrete beams, it is easy to test the claim made for the economy of the combination team by the ordinary formulæ.

The rolled steel joists intended to act as reinforcement can be built up with the steel stanchions as integral portions of the general steel framework, and, being securely riveted in position, they are firmly secured, not only at each end, but at intermediate points where main girders and joists are connected. Therefore the system of reinforcing members constitute a working platform capable of supporting the moulds and centring for constructing the beams and floor slabs. The reinforcement is not exposed to the risk of accidental displacement, as sometimes happens in the case of reinforced concrete, and the system of rolled-steel joists, in virtue of its load-bearing capacity, is capable of supporting the dead weight of the brick and concrete afterwards added, and moderate working loads in addition, without waiting for the concrete to set.



Section B—B.

Metropolitan Railway New Offices, Baker-street, W.

NEW OFFICES FOR THE METROPOLITAN RAILWAY.

THE Metropolitan Railway Company recently placed in competition a certain number of engineering firms specialising in the design of reinforced concrete structures, for the new offices which the company intend to erect on the site of the Baker-street Station. Messrs. Edmond Coignet, Ltd., of Victoria-street, Westminster, have been selected for the preparation of the working drawings, and the work is to be executed on their system under the control of Mr. W. Willox, M.Inst.C.E., Chief Engineer of the Metropolitan Railway Company.

The principal dimensions of this large building, which is to be constructed entirely in reinforced concrete, are as follows:—The total length of the front elevation will be 140 ft., and the height, measured from the foundations to the roof, will be approximately 90 ft. The back portion of the structure will have two wings, measuring respectively 111 ft. in length by 38 ft. in width, and 100 ft. by 43 ft. for the smaller wing, the latter being connected to an existing building by a footbridge 82 ft. in span, 12 ft. wide, and with a height of 15 ft.

A retaining wall in reinforced concrete, of a length of 152 ft., will run parallel to the front elevation. The total length of the retaining wall, including the returns, will be 212 ft., the height being 24 ft.

The walls of the building are to be entirely in reinforced concrete of a thickness of 6 in., and for the principal elevation the wall is to be faced with brickwork.

The building will be composed of a lower basement, basement, booking-hall floor, ground floor, first, second, and third floors, and a flat roof. The superloads, up to the first floor included, are to be 150 lb. per square foot, the second and third being 90 lb. per square foot, and the roof 40 lb. per square foot.

The total superficial area of floors and roof in reinforced concrete will be approximately 65,000 sq. ft.

VENTILATION.

AT a meeting of the Royal Society of Arts on the 7th ult. a paper on the "Influence of Ozone in Ventilation," by Dr. Leonard Hill, F.R.S., and Dr. Martin Flack, M.A., was read.

The authors said that the good effects which resulted from efficient ventilation and open-air treatment, though generally supposed to be due to the chemical purity of the air, were due really to the movement, coolness, relative humidity of the air, and the ceaseless variation of these qualities. The ventilating engineer had hitherto followed a great illusion in thinking that the main object to be attained was chemical purity of the air. The heating engineer had sought after an equally great illusion in striving to obtain a uniform summer temperature. The ventilating and heating engineers should aim primarily at giving air which was cool and of proper relative humidity, and which moved so as to vary the cutaneous state of the body. Comfort and

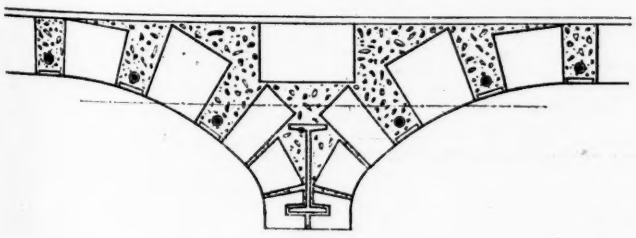


FIG. 1. *Section thro' Brickwork*

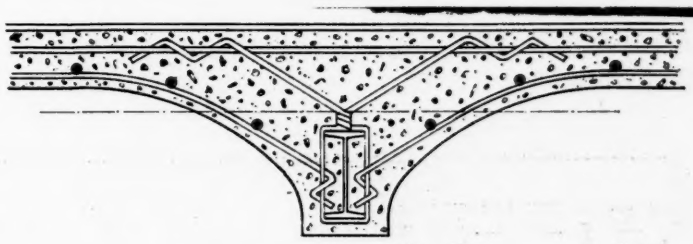


FIG. 2. *Section thro' Concrete Joint*

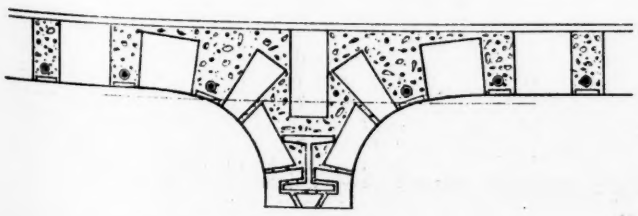


FIG. 3. *Section thro' Brickwork*

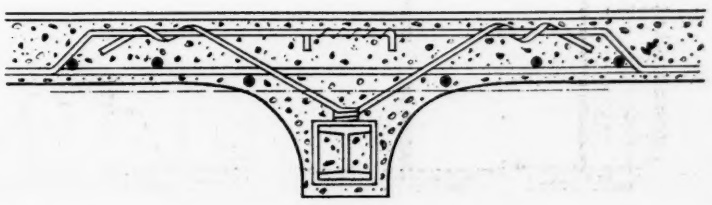


FIG. 4. *Section thro' Concrete Joint*

New System of Reinforced Brick Floor.

discomfort in crowded rooms and shut-up places depended, not on the chemical purity of the air, but to a minor degree on the influence of the smell of the air on the olfactory sense, and, to a vast degree, on the influence of the temperature and relative humidity, and the variations of these qualities of the air, which acted on the great field of cutaneous sensibility. The chemical purity of the air might be considered from three points of view—the concentration of carbon dioxide, the concentration of oxygen, and the supposed presence of organic poison exhaled by the breath.

Owing to the fact that a percentage of carbon dioxide exceeding a very few parts per 1,000 was not legally permissible in factories, it was commonly supposed that any greater excess acted as a poison. The truth of the matter was quite otherwise, for whatever the percentage of carbon dioxide in the atmosphere might be, that in the pulmonary air was kept constant at about 5 per cent. of an atmosphere by the action of the respiratory centre. It was impossible that any excess of the gas should enter the body even in breathing the air of the worst-ventilated room, in which the percentage of carbon dioxide assuredly did not rise above 0·5 or at the outside 1 per cent.

The oxygen in the worst-ventilated theatre, schoolroom, or chapel was never lessened by more than 1 per cent. of an atmosphere, but all the evidence went to show that only when oxygen was lowered below a pressure of 14 to 15 per cent. of an atmosphere did signs of oxygen want arise. A diminution of 1 per cent. of an atmosphere had not the slightest effect on health or comfort.

As to the general principles which ought to control the practice of the heating and ventilating engineer, the old English methods of open fire and open window had very much to recommend them. By the open fire air was kept moving and cool air was brought in; the heating was by radiation, and uniformity of the conditions of temperature in the room was prevented. On the other hand, the impulsion of hot air into a room was the most objectionable of all the systems employed. A cool air and radiant heat were the ideal; the hot air system gave neither. In cold weather the heated air became excessively dry; the vigour and health of children in America had been seriously undermined by the impulsion of hot "desert air" into the schools.

In the concluding part of their paper the authors discussed the uses of ozone in ventilation, basing their remarks on experiments carried out with an ozonising apparatus put at their disposal by the Ozonair Company. They stated that by the smell concentrations of ozone of far less than one part in a million could be detected, and the gas should be present in the air for continuous breathing in concentrations not greater than that scarcely perceptible to the smell. Concentrations of even one part in a million were too irritative. Very weak concentrations, barely perceptible to the smell, had no ill effects, but destroyed the effect of unpleasant smells and gave a certain tang or quality to stuffy air which relieved its uniformity. It was in this respect that ozone had its use. There existed in modern conditions of life so many trade shops, tube railways, cold meat stores, etc., where the employees were exposed to a persistent, uniform, and depressing smell. The air in many buildings was made to smell by the heating appliance used. The addition of ozone took away the smell and relieved the monotony of such air, and as the Ozonair apparatus could, by the turning of a switch, be put in or out of use, the uniformity of the atmospheric conditions could thus be frequently changed. The ozone, no doubt, exerted its effect both on the cutaneous and respiratory nerves. They thought that the addition of ozonised air to the Central London Railway had improved the conditions, the unpleasant characteristic smell of the tube being diminished, and the monotonous quality of the air improved.

CONSTRUCTION NOTES.

The Road. SIR JOHN H. A. MACDONALD read a paper before the members of the Royal Institution on the 16th ult. on "The Road: Past, Present, and Future." He said that the problem of the future was to find the best mode by which a road could be constructed which would not have its surface broken by traffic and would make transit easier both for passengers and goods, and should neither form puddle holes nor exude mud to clog the vehicles and to form thick dust when the weather was dry; in short, that there should be no loose material from the road, except the small quantity caused by surface wear, which it was found was but trifling when a sound crust had been rolled in. It might seem extravagant to say that in another decade the main roads would have become practically mudless, dustless, and smooth ways, but if any one had prophesied on the first day of the new century that before twelve years had passed there would be more than 200,000 motor vehicles upon the roads of Great Britain, and that of the 500,000 horses in London 420,000 would have disappeared from the streets, the presumptuous prophet who said such impious things would have been considered fit only for Hanwell or Colney Hatch. Considering what was to be the road of the future, the question, "What shall be the weight-bearing crust?" was one of vast importance, and this was engaging the attention of the advisers to the Road Board. One thing was now universally recognised—that the road of the future should be a truly bound road, in which whatever kind of stone was used that stone should be held together by some pitchy or bituminous material so that it should be indeed a crust and not something which had no real cohesion, and into which Macadam's enemy, the water, could make its way whenever water fell. Roads formed as regards the crust in this way were now common. Many could be seen in Kent and other counties near London, and stretches were being laid throughout the kingdom. Would it not be well to endeavour to provide an elastic skin or carpet to lie between the vehicle and the bearing crust? That question was also engaging attention. A material to be used for an elastic carpet for the road crust must have a viscous liquid quality. Research had been made with pitch and with bitumen, and the conclusion had been reached that pitch would not give satisfactory results, but bitumen would do so. It was expected that with such material laid on the top of the main road crust and integrated with it a valuable road protection would be supplied, so that the road crust would be practically permanent, the upper protecting sheet being re-made up and re-laid as required. To fulfil the ideas of providing a partially elastic carpet which would carry out the silencing of the rolling noise of vehicles and reducing shock, the engineers at the Road Board had already decided on experimental roads which would consist of a strong road crust intended to carry the weight of the traffic, and on this to superpose the renewable carpet.

The New London Dock. THE Port of London Authority has received, through the Prime Minister, an intimation that the King has consented to cut the first sod of the new dock about to be constructed south of the Royal Albert Dock. It is stated that the estimated cost of the scheme for the building of the new dock is nearly 2,500,000*l.*, and the work will occupy some years. The length of the dock will be 4,600 ft., so that there will be a quay length of 9,200 ft. The width at the eastern end will be 700 ft. and at the western end 500 ft. There will be a depth of 38 ft. of water, and the area of water in the dock will be 65 acres. The land on which the new works are to be carried out was bought some ten years ago.

The Necessity for Standardisation. SIR JOHN MCCALL, Agent-General for Tasmania, presided at a recent meeting of the Institute of Sanitary Engineers, when the Presidential address was delivered by Mr. A. J. Martin, who has been re-elected President of the Institute. Mr. Martin said that the historian of the next generation would have to put on record how the greatest commercial nation in the world, fighting for dear life against a swarm of keen competitors, persisted in handicapping itself with an antiquated and cumbrous system of weights and measures totally different from that employed by the rest of the world, and containing such gems as that 30¼ square yards make one rod, pole, or perch. The most striking case probably of expense and inconvenience caused by the absence of a recognised standard had occurred in connexion with railway gauges. Undeterred by our experience, India, Ceylon, and Australia had committed themselves to a policy of mixed gauges, and, sooner or later, would have to rectify their mistakes. The employment of standards involved the application of systematic tests, which had given rise to a new profession, that of the testing engineer. The rigorous tests now applied to all kinds of engineering materials had led to a vast improvement in their quality, reliability, and uniformity. The standard of the qualification of the engineer had undergone a notable evolution. Local authorities had begun to take a more enlightened view of their duties, and the office of the District Surveyor to-day was far from being a sinecure. He regarded it as a reproach to British common sense that men utterly devoid of engineering qualifications should be free to undertake work of the gravest import to the life and health of the community. In the absence of a practical working standard of professional competency local authorities requiring the services of an engineer not infrequently advertised for competitive schemes. The weak point of the competition system was that it merely tested the scheme, while it afforded no criticism of the competence or honesty of the man. The Association of Consulting Engineers, which had been recently formed, met a long-felt need by bringing together engineers who were competent in their respective lines. He thought that local authorities should be able to see at the offices of the Local Government Board a register of all engineers who had carried out works of the kind they had in view within a specified time.

Engineering Features of the Royal Liver Building, Liverpool. BEFORE the Liverpool University Engineering Society Mr. A. E. Culley, A.M.Inst.C.E., recently read a paper, entitled "Some Engineering Features of the Royal Liver Building, Liverpool." By the aid of a series of lantern slides Mr. Culley described the progress of the edifice, which is of reinforced concrete construction throughout. It was explained that by using this material as much as 25 per cent. in the cost of the building was saved. Dealing next with the walls, Mr. Culley stated that these were made of granite, the thickness of which varied from 3 in. to 14 in., and owing to the fact that the building was of the frame type the walls were able to be erected at several different floor levels simultaneously. Finally, the internal arrangements were dealt with, such as the lift accommodation, the special heating system, and the clock.

Standard Heads for Small Screws. THE standardisation of small screws and screw heads was first considered by the Engineering Standards Sectional Committee on Screw Threads and Limit Gauges, and finally by a special sub-committee appointed in July, 1906. The report now issued was prepared after exhaustive evidence had been obtained from the chief manufacturers and users of small screws in this country, and contains recommendations for the dimensions of countersunk, instrument, round, cheese, and filister heads for British Association screws of sizes 0 to 14 and for the saw cuts in the same. The report concludes with a sheet of illustrations and a table of standard proportions.

The British Fire Prevention Committee's Fire Tests. THE British Fire Prevention Committee's testing operations last week comprised fire tests on a series of window openings glazed with "Copperlite" glazing, no panel of glazing exceeding 4 ft. super., and twelve panels being under test for varying periods of sixty minutes and ninety minutes, under the Committee's standards. There were further tests with two reinforced concrete doors made for the Committee for experimental purposes, and submitted for the Committee's standard two-and-a-half hours' high-temperature fire test. Here, again, work that had never before been under official examination was under observation. In both cases the results of the tests will be published shortly.

THE BUILDING TRADE.

MANCHESTER BUILDING TRADES EXHIBITION.

THE seventh Manchester Building Trades Exhibition, organised by Mr. W. Cawood, was opened by the Lord Mayor of Manchester at the City Hall on Tuesday. The Exhibition is under the patronage of the Manchester, Salford, and District Building Trades Employers' Association, Manchester and District Branch National Registration of Plumbers, the Institute of Plumbers, Ltd., and others. The Exhibition includes a series of town-planning schemes, which will be of special interest to local architects. Diagrams of the proposed alterations of the Royal Exchange in the Bill before Parliament, together with new ideas showing how that scheme could be improved on, are also shown, as well as the long-discussed enlargement of the railway-station.

The following are some notes on the exhibits :—

At Stand No. 69 the Acme Patent Ladder Company, of Summerley-street, Earlsfield, London, S.W., show extension ladders of all descriptions, and also their automatic folding platform steps and automatic trap-door fire ladder.

At Stands Nos. 65 and 66 Messrs. W. R. Pickup & Co., Ltd., of Horwich, manufacturers of porcelain-enamelled fireclay and sanitary ware—comprising baths, lavatories, urinals, closets, sinks, etc.—show their stoneware pipes, gullies, and fittings, etc.

At Stand No. 74 the Gelatinous White Company, Ltd., Harewood Wharf, Norwood Bridge, Southall, show their gelatinous whiting, Filocol, which is a distemper for use on ceilings and inside walls. It does not scale or peel; it is sanitary, and gives a refreshing odour to the room where it is used. It can be had in powder or paste, and is used as a substitute for whitewash.

At Stand No. 89 Messrs. Kirchner & Co., 21, 23, and 25, Tabernacle-street, London, E.C., exhibit their woodworking machinery, including a heavy tenoning machine, with top and bottom scribing spindles, specially designed for builders and contractors; a combined rising table saw-bench, with spindle moulder and slot mortiser, suitable for a variety of work; a heavy rising table saw-bench; patent overhand planing and moulding machine, with tables 8 ft. long; extra heavy panel planing and thicknessing machine; universal sharpening machine; combined spindle moulding and recessing machine, with top arm which can be swung over out of the way when not required; patent "Ideal" band sawing machine, with latest outside ring oiling bearings; new "Outside" type four-cutter planing and moulding machine; combined over and under planer; and various other machines.

At Stands Nos. 16 and 17 Messrs. C. H. Musselwhite & Son, Grand Surrey Canal, Deptford, London, S.E., show their "Cebino" ceiling whitewash distemper in paste form. The material has been introduced to supersede the wasteful and objectionable methods inseparable from home-made whitewash. The distemper will readily mix with any dry colour, producing suitable effects in wall and frieze decoration at a moderate cost.

At Stands Nos. 27 and 28 the Saxon Portland Cement Company, Ltd., Cambridge, show examples of the raw material from quarry, of raw material after drying, of ground marl ready for burning, and also a block of raw material ready for kilns, samples of clinker from continuous and rotary kilns, of clinker after preliminary crushing, and of finished Saxon cement.

At Stand No. 44 Messrs. F. McNeill & Co., Lamb's-buildings, Bunhill-row, London, E.C., and also Manchester and Salford, show their asphalt roofing felt, sarking felt, bituminous hair felt, inodorous felt, patent metal-asphalt damp-proof course, fibrous asphalt damp course, pure Trinidad bitumen damp course, dry hair felt, fibrous plaster slabs, sheeting, "Combinite" roofing, etc., and several other of the firm's well-known specialities.

At Stand No. 63 Messrs. C. Jennings & Co., timber merchants, joinery manufacturers, and general woodworkers, Pennywell-road, Bristol, show an example of their fretwork arches with balustrading above. Special attention is directed to the specimens of oak and ash plywood. Other exhibits include two windows, one illustrating the firm's P.T.O. fittings, and the other Miller's B.C. system. Doors are shown in a variety of designs, also balusters round turned, square cut, and fretsawn, and newels, and other examples of their manufactures. The firm's patent geyser is shown, and there will be demonstrations of its working at frequent intervals; and also mouldings, electric light casings, and picture rails in great variety, and Smokcure chimney-pots. Messrs. Jennings are exhibiting a four-fold brass-jointed souvenir rule and a new fully illustrated catalogue.

The Patent Rapid Scaffold Tie Company, Ltd., 124, Victoria-street, Westminster, S.W., have erected a scaffold at their stand (No. 60), showing the well-known Scaffixer scaffold lashings. Demonstrations are given at intervals showing the speed, strength, and efficiency of these lashings.

Messrs. W. B. Haigh & Co., Ltd., Globe Iron Works, Oldham, are exhibiting their patent combination chain and hollow chisel mortising machines, etc.

Messrs. Shaw & Carter, Ltd., 10, Edgbaston-street, Birmingham, are showing the following :—Patent cloakroom fittings for elementary and secondary schools, patent revolving boot-racks, "Shawcar" patent umbrella holders for schools, single and double rail hat and coat racks, hat and coat racks heated by hot water for schools, "Shawcar" patent ball-bearing mortise and rim locks, "Shawcar" patent ball-bearing axle pulleys, "Simpil" patent axle pulleys for use in sashes, doing away with cords, weights, and boxings, "Shawcar" self-closing door hinges, to act without springs, new and improved designs of bronze metal and brass lock furniture and door fittings, for public buildings, schools, private houses, etc.

An interesting feature of the stand of Messrs. G. Brady & Co., Engineers and Lift Makers, Pott-street, Ancoats, Manchester, is a new patented type of electric service lift, working, to raise loads up to 56 lb. The novelty of this lift is that steel tapes are used instead of wire or hemp rope. It can be operated either by push buttons or hand rope control, and is capable of making 1,000 journeys at a cost of 1d. for current consumption (at 2d. per unit). An electric cathead is also shown, suitable for builders, and is designed for handwork and rough usage. A patent hand-power service, or dinner lift, is shown complete and working, to raise a load of 56 lb. It is noiseless and self-sustaining, the brake acting automatically, so that the cage is sustained at any point immediately the hand rope is released. A hand-power goods' lift gear to raise a load of 10 cwt. is shown. This is also noiseless and self-sustaining, and of similar construction to the service lift, but fitted with spur gearing. A revolving shutter is also shown. These shutters are for car entrances; as they coil at the top they are out of the way, and are easily operated, being usually balanced on spring rollers. Large shutters are worked by gearing.

Messrs. Cakebread, Robey, & Co., of Caroba Works, Wood Green, London, N., are exhibiting at Stand No. 70 a selection of their specialities of drain and tube clearing machines. Among their patent locking joint devices for preventing rods being left in a drain or becoming disconnected in use is their "Ferret" lockfast joint, of which they have supplied his Majesty's Government with over 200,000 ft. during the last few years. This joint has also been largely exported. They also show the "Magnet" lockfast joint, which obtained a bronze medal at the Health Exhibition at Brighton, 1910, of the Royal Sanitary Institute. This joint is made of cast brass, and has no rivets or pins of any kind, and has no spring to get out of order. This firm also exhibits several patterns of smoke machines, and among these we notice the "Standard" smoke machine, which obtained a bronze medal at the exhibition at Belfast last year of the Royal Sanitary Institute. One of the features of this machine is its portability, as it only weighs 14 lb., and the size is only 12 in. by 7 in. by 9½ in. high. The features of the patent drain plug exhibited by the firm is its easy action, owing to a wheel carriage revolving between the thumb-screw and top plate. Among other goods exhibited are drain-testing bags, suction pumps, clearing obstacle rods for pruning trees, etc., also Sutton's patent lead collars, which can be fixed to existing work without removing pipe from nozzle of water-closet basin. Another exhibit is Steven's patent barrel lock, which can be fixed with 1-in. centre bit in a few minutes. It is very strong and reliable, and there are no delicate working parts.

Messrs. Stothert & Pitt, Ltd., Engineers, London and Bath, show their "Smith" mixer on skids fitted with feeding hopper and stand and driven by an electric motor. This machine is used very largely for mixing both concrete and tar macadam. The mixer has a capacity of 6 cubic ft. mixed material per batch. The firm also show the "Victoria" concrete mixer, with special feeding arrangement, water tank, and driven by an electric motor; the whole plant is mounted on a truck with road wheels and swivelling fore-carriage. The capacity of this mixer is 6 cubic ft. per batch mixed material. "Smith Hand Concrete Mixer" is also mounted on wheels and complete with charging platform. The capacity of this mixer is 3 cubic ft. mixed material.

At Stand No. 56, Vulcanite, Ltd., of Westinghouse-road, Trafford Park, Manchester, and of Belfast, London, etc., show a model brick building with a flat roof laid out as a miniature roof garden, the roof being constructed of joists and 1-in. T and G boards covered with patent Vulcanite roofing. Messrs. Vulcanite, Ltd., who are the patentees of this roofing, have covered roofs measuring in the aggregate upwards of 4,000,000 super. yds., including hotels, villas, works, and public buildings in the United Kingdom, the colonies, America, and other countries, and they claim that their patent Vulcanite roofing is a perfect covering for flat roofs of wood or concrete construction, inasmuch as it is absolutely waterproof and fireproof, and is not affected by expansion and contraction, vibration, or settlement of the building. The exhibit also includes a water tank, which is formed of 9-in. brick walls, the bottom and sides being lined with Vulcanite, and afterwards bricked in with white glazed bricks. In order to demonstrate the waterproof qualities of the Vulcanite ordinary mortar only has been used and an opening has been left in the glazed brick lining leaving a portion of the Vulcanite exposed. Another feature of the exhibit is "Bituna" pure bitumen dampcourse. This material, which is being specified by nearly all the leading architects for foundations, subways, arches, etc., is guaranteed to be made of pure Trinidad bitumen with no admixture of coal-tar or coal-tar pitch. A section of a brick wall is shown standing in water with a course of "Bituna" about 6 in. above the water level. Underneath the dampcourse the bricks are soaking wet, whilst they are perfectly dry above. Messrs. Vulcanite, Ltd., are also exhibiting Vulcanite and Rexilite dampcourses for foundations, etc.; Leatherite, Vulcanite, asphalt, and Rexilite roofing for sloping and circular roofs; Vulcanite bitumen and Vulcanite waterproof sheetings for underlining slates, tiles, etc.; and a model building covered with Rexilite.

The specialities Messrs. D. Anderson & Sons, Ltd., are exhibiting are as follows :—Their "Rok" roofing has been recently put on the market, after exhaustive and successful trials in India and other countries where the

conditions are far more severe than in England. In South Africa the South African Union officials have passed it as meeting all their requirements of a roofing felt, and have given permission for its use in contracts to be executed for them. At home it has recently been used for roofing buildings for the Great Southern and Western Railway of Ireland, at Limerick, and many other buildings. The firm are also showing their Stoniflex felt, which is well-known as a capital felt for roofing buildings, and also for sarking and lining purposes. Another new article they are showing is their "Zerolite" insulating paper for insulating cold stores and lining purposes. They are also drawing the attention of architects and others to the bitumen sheeting, made from pure Trinidad bitumen, which they are supplying for reservoirs, tanks, etc., and their pure bitumen dampcourse for walls. Rolls of their bituminous hair felt, which is coming greatly into favour for sound deafening and sarking purposes, are on show. This article is an improvement on the ordinary hair felt for this purpose, as it is vermin proof. Fencing treated with Sideroleum wood preservative is shown. It is also used for half timber work, sheds, etc. It is both a preservative and gives a pleasing appearance, being of a nut-brown shade. The firm also show a range of galvanised sheets coated with their "Siderosthen" anti-corrosive paints in various shades, which they commend to architects' attention as paint for galvanised iron.

The Interoven Stove Company, 78A, Great Queen-street, W.C., are showing their well-known stove. The "Interoven" may be used as a sitting-room grate, presenting exactly the normal appearance, while a simple movement converts it into an efficient cooking-range, equal in its cooking capacity to a 36-in. kitchener. The hot-plate provides room for four large saucepans, two of one gallon and two of three pint capacity. The high-pressure circulating boiler can be heated when the oven or the open fire is in use, ensuring a continual supply of hot water. It can be cleaned or removed without any part of the stove being unscrewed or unset. Hot-water tanks of up to thirty-five gallon capacity can be fitted. All flues are of iron, thus reducing cost of setting to a minimum. It can be fitted in any ordinary room, opening 14 in. deep if without boiler, or with boiler by cutting chase in wall for boiler flue 2 in. deep by 5 in. wide by 20 in. high. It is fitted with a blower, the hot-plate acting as this very useful addition to an open fire-grate. The oven and all working parts can be removed and replaced without the use of tools. The flues and chimney can be easily cleaned by lifting out oven.

The exhibit of the Art Metal Construction Company, Ltd., and Roneo, Ltd., includes steel doors, steel desks, and steel furniture. The manufacture of steel furniture, doors, partitions, desks, etc., was originally developed in the United States. The Roneo, Ltd., have been acting as selling agents for the eastern hemisphere for some time, but recently the Art Metal Construction Company, Ltd., has been formed, and a factory is now being erected at Silvertown for the purpose of turning out this work in England. The door exhibited was tested by the British Fire Prevention Committee on December 13 for a period of two hours. An official report is now being prepared. One has only to look at the door to be convinced of the manner in which it went through this severe test. In this exhibit are shown doors panelled in various styles, and though the architect's design can be followed, protection against fire is maintained. Steel counters, screens, and dividing partitions are shown, as well as the more complicated roll-top desks, vertical letter files, and cases with roller curtain. The exhibit includes library shelving and strong-room shelving. The finish of the steel work is excellent, and we understand that the material is made of a special grade of steel, free from scale and imperfections. It is treated to three coats of best stoved japan, with the result that it will not chip or scale, and will withstand any moist climate. A steel door exhibited is finished in grained mahogany, the graining being very well done.

The Val de Travers Asphalte Paving Company, Ltd., 92, Market-street, Manchester, are exhibiting the following models:—Tank lined with asphalt, asphalt covering to concrete roof, valley gutter lined with asphalt, stable, vertical plate work, covering of casemate, sewer and entry, powder magazine floor and vertical sides, sanitary manger, bridge covered with asphalt, asphalt underlay for parquet flooring, horizontal dampcourse, and bituminous concrete block to absorb vibration of machinery. They show samples of compressed asphalt cut up from various streets after many years' wear, natural rock asphalt as mined, powder, and slabs hydraulically compressed, and of various sizes and thicknesses. They also show rock asphalt mastic for paving, granited, and in two lays for roofs, etc. Val de Travers asphalt blocks are also shown, Pyrimont Seyssel asphalt blocks, "Matrix" in barrels and sample tins, acid resisting asphalt paving, Bridport grit, refined Trinidad bitumen, and refined Venezuelan bitumen.

The Beaver Company, of Ottawa, Canada, and Buffalo, New York, who have established themselves in the United Kingdom with the object of developing their substitute for lathe, plaster, and wallpaper, are exhibiting at Stand No. 73A. Beaver Board is a finished wall-board that takes the place of both lathe and plaster and makes the use of wallpaper unnecessary. It is made entirely of selected woods, reduced to fibrous form and pressed into panels of various sizes with a uniform thickness of a scant $\frac{3}{16}$ of an inch. It has a mat or pebbled surface, adapted to tinting or painting in any colour-scheme. It is very light, and yet tough and strong. In manufacture the wood fibres are crossed, ensuring the maximum resistance to sound, cold, or heat. The material is uninjured, it is claimed, by shocks, strains, and vibrations that often bring plastered ceilings down, and it will not crack, chip, or deteriorate with age.

MONTGOMERY'S BUILDING TRADES EXHIBITION.

THERE must be considerable activity in the building trades at Manchester, judging from the fact that not only is there the exhibition of building materials, etc., now being held in the City Hall, but that a Building Trades Exhibition, arranged by Mr. H. Greville Montgomery, is to be held at Rusholme from March 9 to March 23. The offices of the Exhibition are at 27, Brazenose-street, Manchester.

LONDON MASTER BUILDERS' ASSOCIATION.

THE fortieth annual general meeting of the London Master Builders' Association was held in the Council Chamber, Koh-i-Noor House, Kingsway, W.C., on February 29. The President (Mr. G. Bird Godson) presided, and afterwards Mr. James S. Holliday (the newly-appointed President).

The following officers and members to fill up rota vacancies on the Executive Council were elected for the coming year:—

President: Mr. James S. Holliday (Messrs. Holliday & Greenwood, Ltd.).

Senior Vice-President: Mr. Walter Lawrence, jun. (Messrs. Walter Lawrence & Son).

Junior Vice-President: Mr. W. F. Wallis, J.P. (Messrs. G. E. Wallis & Sons, Ltd.).

Treasurer: Mr. Edmond J. Hill (Messrs. Higgs & Hill, Ltd.).

Council: Mr. C. E. Allen (Messrs. Allen & Co., Pimlico); Mr. F. J. Gayer (Messrs. E. A. Roome & Co.); Mr. R. J. Holliday (Messrs. Holliday & Greenwood, Ltd.); Mr. F. M. May (Messrs. Holland & Hannen & Cubitts, Ltd.); Mr. F. G. Minter; Mr. W. J. Renshaw; Mr. Howell J. Williams, J.P., L.C.C. (Messrs. H. J. Williams, Ltd.); Mr. Hy. Wall (Messrs. Chas. Wall, Ltd.); Mr. Walter Wood (Messrs. F. & F. J. Wood).

Honorary Auditor: Mr. E. S. Blake (Messrs. W. E. Blake, Ltd.).

A hearty vote of thanks was given to Mr. G. Bird Godson for the able and assiduous manner in which he had discharged the duties of President during the past year.

The Trade Disputes Act (1906) was considered, and the meeting desired unanimously to lodge a petition against the said Act in the House of Commons.

Instructions were given to secure the signatures of all the members of the Association, and they are earnestly requested to do so.

The fortieth annual Report was presented and approved, and also the audited accounts.

From the annual Report we take the following:—

"During the past year there has been an improvement in the building trade, but the abnormally keen competition which prevails renders it difficult to carry on business on anything like profitable lines.

The Institute of Builders formulated amendments to Clauses 20 and 28 of the Agreed Contract, together with a new form of contract for sub-contractors. These proposals were laid before this Association and were approved. Further steps in the matter are now being taken.

The National Insurance Bill has been carefully considered in co-operation with other bodies. The Council is glad to recognise that public attention is being drawn to the gross abuse of the Trades Disputes Act (1906), and they are associating themselves with other bodies in pressing upon the Government some action to put an end to the abuses existing under the Act. Careful attention has been given to several other Bills before, or to be brought before, Parliament, and they have been referred to the Employers' Parliamentary Council. The Council takes this opportunity of thanking Mr. William Shepherd and Mr. Benjamin I. Greenwood for their services to the trade as members of the Executive Committee of the Employers' Parliamentary Council.

Mr. F. G. Rice was appointed representative of this Association on the Home Office Departmental Committee appointed to consider matters relating to the dangers arising from the use of lead in painting, to collect evidence, and to report thereon. The Committee appointed has held many protracted meetings, and the building trade is under great obligations to Mr. Rice for the interest, attention, and ability which he has devoted to the subject.

The labourers applied for the formulation of a Working Rule Agreement, but the Council could not consent to the proposal. The Council declined to consider an application for an increase of wages to smiths and hammermen, as there was no Working Rule Agreement between their societies and this Association. Six months' notice of the termination, on June 8, 1912, of the present Working Rule Agreement between this Association and the Amalgamated Society of Carpenters and Joiners was received. A copy of a new Working Rule Agreement was also received, but the Council of this Association could not accept it, as it was proposed and signed jointly by the Amalgamated Society of Carpenters and Joiners and by the Furnishing and Cabinet-Makers' Societies, the latter not being a recognised branch of the building trade.

Amongst other matters the Council have given careful attention to the following:—

1. Suggestions from the Quantity Surveyors' Association as to items to be embodied in all preliminary bills of quantities.

2. A movement on the part of organised workmen to obtain permission to use the Labour Exchanges for other purposes than those for which they were originally intended."

PORTSMOUTH MASTER BUILDERS' ASSOCIATION.

THE annual dinner of the Borough of Portsmouth and District Master Builders' and Building Trades Association was held in the Mayor's Banqueting-room of the Town Hall recently. Councillor A. E. Porter (President of the Association) in the chair, and those supporting him included Messrs. F. Higgs (Vice-President of the National Federation of Building Trades Employers), F. Woolley (Secretary of the Southern Counties Federation), J. Harding (Vice-President of the Portsmouth Association), F. B. Roskell (Secretary of the Portsmouth Association), etc.

After the loyal toasts had been duly honoured, Mr. S. Salter submitted "The Mayor and Corporation," and Councillor E. S. Main responded. He said there was one direction in which, in his opinion, the Corporation should not interfere with the builders, and that was in attempting to regulate their contracts with their employees. Whatever was done in connexion with the Town Council contracts, he thought they had no right to interfere with builders' contracts with their men. In the Corporation they endeavoured to so frame their contracts as to make them fair all round, both for employer and employed. But when it came to those outside the Corporation they had no right to interfere. He was the last person in the world to say that they should not pay the working classes an adequate wage, because it enabled the men

to live in better houses, and in the long run everyone was the better off; but he thought the employers could be well left to deal with their employees, without any interference from the Council.

Councillor Ash proposed "The Portsmouth and District Master Builders' and Building Trades Association." Some people thought the Association existed merely to fight the men, but that was not so. Its object was to make everything run smoothly, by inducing all master builders to "toe the line" and work in unison in dealing with their men.

The President replied, and said the Association was not only forty years old, but its membership numbered eighty, which was very good considering the circumstances of the town. They hoped, however, to augment that number, and to induce all master builders in the district to join. Co-operation was in the air. The men were teaching them that, and it was only too evident that unless the masters combined they would have to go under. The Association was not formed to fight the men, but in order that by co-operating one with the other, and working in unison, they might enable things to go on the more smoothly. But without unity the employers would not be able to do anything, nor would they be able to get their aims carried out. The men's leaders were endeavouring to get all the employees to join the unions. That was their great aim, and that was really the object in pushing on the fair wages clause in the Council. There could be no other reason for it, as the existing clause for ensuring fair wages in all Corporation contracts was quite sufficient for all honest builders. As an Association they were always ready to meet the men in remedying just grievances. Up to the present time they had got on very well with the men, and had fought their battles in such a manner that both sides were satisfied. It was now many years since the Portsmouth builders had had any friction with their men, and, although they had some trouble with the carpenters at the present time, he hoped it would be settled amicably.

Councillor G. F. Smith submitted "The National Federation and Kindred Associations."

Mr. F. Higgs replied on behalf of the National Association, and spoke at some length on the advantages of organisation, not merely for meeting the combinations among the men, but also for dealing with the Government, with Town Councils and other public bodies, who all tried to get the better of builders. Combination was also useful in preventing undue competition among the members of the trade.

Mr. F. Woolley replied on behalf of the Southern Counties Federation.

Mr. Vosper, as President of the newly-formed Portsmouth Engineering and Allied Trades' Association, also replied. He dealt with the fair wages clause, and asked why grocers, chandlers, tailors, and other trades should not be compelled to hang up their rates of wages as well as the building trades.

The other toasts were "The President" (proposed by Mr. Crockerell and acknowledged by Councillor Porter) and "The Visitors and Hon. Members."

TECHNICAL SCHOOLS AND THE TRADES.

THE nineteenth annual general meeting of the Association of Technical Institutions was held on the 20th ult., at the Goldsmiths' Hall, Foster-lane, E.C. Sir George H. Kenrick (Birmingham) was unanimously elected President of the Association for the ensuing year, and in his Presidential address on the subject, "Shall We Teach Trades-?" said the amount of trade actually taught at the present time was very small compared with the total instruction given. As soon as an occupation had been entered upon by a former scholar of an elementary school there was, and there ought to be, a demand for more information about the work than could be obtained in an ordinary modern factory. If they were doing their duty, so far from discouraging this demand, they should do all in their power to foster it. It was useless to expect discoveries in science to be applied to industries unless they had teachers who would make it their business to master these discoveries and explain them to the young people who were learning the trade. Never was there a time in which employers and employees were so completely syndicated as they were now. For the purpose of giving the training best suited to the trade, every trade should form its own Education Committee and give it plenty of money and plenty of discretion. In these circumstances, he believed, every local authority would do its utmost to forward the movement, and he could not but believe that the Board of Education would second those efforts with equal zeal.

Mr. W. M. Gardner, Principal of the Technical College, Bradford, maintained that it was impossible in these days for a lad to learn his trade properly in works. They were getting further away from such conditions by specialisation, and if the young man did not learn his trade at a technical school, he never learned it at all; he became a mere machine, knowing only a portion of the work.

WATER BOARD CHARGES.

AT Westminster County Court on the 21st ult., the Metropolitan Water Board claimed 11*l.* 15s. 3d. water rate against Messrs. Evans, Wadham, & Co., Gray's Inn-square. The claim was based upon sect. 8 of the Board's Charges Act. The defendants had offices occupying two floors, and used the Board's water on both, although the only supply was a draw tap on one floor. The Board claimed the rate based upon the rateable value for both floors.

Mr. Norman Barraclough, of the defendant firm, urged that there was no supply to the floor now sued for, and that he was entitled to draw a glass of water on the floor where the tap was and take it to another part of the premises to drink without being liable to pay water rate for the place where he drank it as well as for the part of the premises where the tap was.

In a second case Messrs. Russell, Woollven, & Co., of Clifton-street, E.C., were sued for 5*l.* 8s., and Mr. F. T. Villiers Bayly, Counsel for the defendants, raised a similar question as to the premises being separate tenements.

Judge Woodfall said he had not to consider whether there was any hardship, and he must find for the Board in both cases with costs.

LIVERPOOL MASTER BUILDERS' ASSOCIATION.

THE annual dinner of the Liverpool Master Builders' Association was held on the 27th ult. at the Hotel St. George. The President, Mr. Thomas M'Hugh, presided, and among others present were Messrs. James Storrs (Chairman of the National Board of Conciliation for the Building Trades), Thomas Woolfenden, Arnold Thornley, W. P. Horsburgh, Joseph Parry, J. T. Alexander, and T. R. Hutchins, and Professor Reilly. Proposing the "National Federation of Building Trade Employers," Mr. R. A. Costain said serious disputes in the building trade had been very exceptional. During the past few years a strike had been practically unknown, and they were quite safe in saying that that was due to the organisation of the employers on the one hand and the men on the other. That day a question had been asked in Parliament as to the wages paid by a certain Liverpool firm carrying out Government work. If that firm had been a member of the Liverpool Master Builders' Association it would not have been necessary to ask a question in Parliament. An inquiry at the office of the Association would have elicited all the information required. They paid satisfactory wages and attracted competent artisans to their service, and, if in nothing else, in that fact their existence was abundantly justified. The toast was responded to by Mr. Storrs and Mr. Woolfenden (President of the Lancashire and Cheshire Federation).

GENERAL BUILDING NEWS.

ENLARGEMENT OF CHAPEL ACCOMMODATION, EXETER DIOCESAN TRAINING COLLEGE.

Following the enlargement of the administrative and teaching accommodation of the college buildings, the enlargement of the chapel has been for some time under the anxious consideration of the authorities. Originally intended for accommodating sixty students, this has now been practically doubled. Owing to the restricted space available for the enlargement of the building, it was only possible to carry it in an eastward direction. Two new bays have been added, and at the west end an organ loft has been constructed, to receive the organ, which originally stood at the ground level and blocked the entrance in the sacred edifice. The seating arrangements originally faced south and north, according to a general arrangement in collegiate chapels. This has now been altered and the whole of the seats face eastward. Provision has been made at the west end for stalls for the clergy, staff, and tutors, and behind the same, under the organ loft, are two enclosures for visitors. The building has been carried out in South Devon limestone, picked on the face, with dressed quoins of the same material, and the angles and buttresses, box ground stone being used for the windows and the dressings. The interior fittings are of oak throughout, and the floor of the nave portion, wood-blocks, laid level throughout. The sacrarium portion is laid with polished slabs of black and white marble, laid diagonally. The contract for the work has been carried out by Messrs. George Setter & Son, the amount of their contract being 816*l.* 16s.; the electric lighting by Messrs. Hubber & Son; the heating on the low-pressure system by Messrs. Wippell Brothers & Row; the stained glass and glazing generally by Messrs. Drake, of the Cathedral-yard; and Messrs. Hele & Co. reconstructed the organ in the new loft. The architect for the extension of the college buildings, and also for the chapel enlargement, is Mr. James Jerman. F.R.I.B.A., Official Architect to the Exeter Diocesan Board of Education, and the clerk of the works has been Mr. E. H. Palmer.

NEW BUILDINGS IN LONDON.

Proposed enlargement of Isolation Hospital, Barnet, N. (3,000*l.*); Secretary, Isolation Hospital, Barnet. Alterations to St. James's Infirmary, Wandsworth, S.W. (570*l.*); Messrs. Dewsett & Jenkins, builders, Sunny Hill-road, Wandsworth, S.W. School, Vicarage-lane, East Ham, E. (7,280*l.*); Mr. J. W. Jerram, builder, Crown Works, Boundary-road, East Ham, E. Buildings, Southampton-buildings, Holborn, W.C.; Messrs. Holliday & Greenwood, Ltd., builders, Brixton, S.W. Buildings for Messrs. Burberry's (outfitters, etc.), Haymarket, W.; Messrs. Prestige & Co., builders, 119, Grosvenor-road, S.W. Extensions of premises for the Civil Service Co-operative Society, 25, Haymarket, W. Extensions of offices of Norwich Union Insurance Company, 51 and 52, Fleet-street, E.C.. Rebuilding shops and offices, etc., Gresham-street, E.C.; Messrs. W. Cubitt & Co., builders, 258, Gray's Inn-road, W.C. Rebuilding shops, showrooms, etc., St. Paul's-churchyard, E.C.; Mr. C. F. Yearsley, builder, 4, Great Marlborough-street, W. Post-office, East Ham, E.; Messrs. Chessum & Sons, builders, 7A, South-place, E.C. Offices, Westminster, S.W.; Mr. J. H. Clarke, architect, 102, Bishopsgate-street, E.C. Hay's Wharf and dock premises, Thames-street, E.C.; Mr. W. Matts, architect, Birkbeck Bank-chambers, Holborn, E.C. Mineral water factory at Schweppes, Ltd., Vauxhall, S.W.; Mr. A. F. Briggs, architect, 9, Queen Victoria-street, E.C. Additions to Cowper-street Schools and Institute, E.C.; Mr. H. C. Clarke, architect, 102, Bishopsgate-street, E.C. Proposed additions to mental hospital, Croydon (35,000*l.*); Mr. G. F. Carter, Engineer, Town Hall, Croydon.

NEW PUBLIC HALL, EARL'S COLNE.

This hall is being erected at a cost of about 2,215*l.* from the designs of Mr. P. M. Beaumont, A.M.Inst.C.E., of Maldon. The building will be erected of red bricks, and includes a large main hall, 55 ft. by 33 ft. The contractors for the work are Messrs. Pudney & Son, of Colne Engaine.

TRADE NEWS.

The Workhouse Infirmary, Newton Abbot, is being supplied with Shorland's double-fronted patent Manchester stoves with descending smoke flues and patent Manchester grates, by Messrs. E. H. Shorland & Brother, Ltd., of Failsworth, Manchester.—The New Hospital, Devizes, is being supplied with the firm's warm-air ventilating patent Manchester grates.

The "Boyle" system of ventilation (natural), embracing Boyle's latest patent "air-pump" ventilators and air-inlets, has been applied to Penrhos New School, Ystradgynlais.

The Beaver Company of Ottawa, Canada, and Buffalo, New York, have recently established themselves in the United Kingdom with an object of developing their substitute for lathe, plaster, and wallpaper. Beaver Board is made entirely of selected woods, pressed up into sheets of various width and lengths. It lends itself to decorative schemes, is guaranteed not to crack or warp, and will stand a strain of 500 lb. pressure on a 16-in. span. With Beaver Board cracked ceilings and warping walls are, it is claimed, entirely obviated. An additional recommendation is the fact that Beaver Board improves with age, and, as years go on, the panels become harder and harder, outlasting all other wall and ceiling preparations. Skilled labour is not absolutely necessary for the fitting-up of the material, and it can be put up without dirt, litter, or inconvenience. Particulars can be had from Messrs. H. W. Peabody & Co. (Beaver Board Department, Mr. R. A. Wilson, manager), 16, Eastcheap, E.C.

Owing to the expiration of lease of their premises at 4 and 5, East Harding-street, Fetter-lane, E.C., Messrs. Sprague & Co., Ltd., lithographers, have removed to Nos. 69 and 70, Dean-street, Soho, W.

SALE OF BUILDERS' STOCK, PLANT, ETC.

Messrs. J. T. Skelding & Holland inform us that they are holding a six days' sale at "The Maltings," Fishpool-street, St. Albans, commencing on Tuesday, March 12, of builders' and contractors' stock, plant, and machinery. Among the articles to be put up are two portable engines, four mortar mills, a well-seasoned stock of timber, steel joists, stanchions, etc., scaffold materials, carts, barrows, harness, etc. This sale is in connexion with the dissolution of partnership—*re* Messrs. C. Miskin & Sons—Miskin *v.* Carter.

APPLICATIONS UNDER LONDON BUILDING ACTS, 1894 to 1909.

AT Tuesday's meeting of the London County Council the following applications under the London Building Acts were dealt with. (The names of the applicants are given in parentheses):—

Lines of Frontage and Projections.

Clapham.—Erection of buildings next to the western side of Park-hill, the southern side of Abbeville-road, and the eastern side of Briarwood-road, Clapham (Messrs. H. F. Buchan & Co.).—Consent.

Finsbury, Central.—Erection of one-story shops in front of Nos. 20, 21, and 22, White Conduit-street, Islington (Messrs. Watson & Thorp for Mr. P. Bendell).—Consent.

Fulham.—Projecting steps at the side of a building on the eastern side of Wandsworth Bridge-road, Fulham, next to Broughton-road approach (Mr. W. L. Griffiths).—Refused.

Islington, South.—One-story addition at the rear of No. 62, Barnsbury-street, Islington, abutting upon the eastern side of Thornhill-road (Messrs. Lovegrove & Papworth for the "Win-it" Motor Works).—Refused.

Islington, East.—Erection of a building on the northern side of Essex-road, Islington (Mr. T. W. Smith for Messrs. W. Danemann and F. C. Hine).—Consent.

St. George, Hanover-square.—Addition to the existing oriel window at No. 7, Balfour-place, next to Mount-street, St. George, Hanover-square (Messrs. Balfour & Turner for Major E. H. Brassey).—Consent.

St. Pancras, South.—Wood and glass porch in front of No. 52, Liverpool-street, King's-cross (Messrs. D. J. Chattell & Sons for Hertford Hotels, Ltd.).—Refused.

Strand.—Projecting sign in front of No. 405, Strand (The Brilliant Sign Company, Ltd.).—Consent.

Strand.—Wood and glass showcases at the Spaten Restaurant, Piccadilly-circus and Shaftesbury-avenue (Mr. C. Masey for Mrs. R. Freeman).—Consent.

Wandsworth.—Porches and wooden bay-windows to houses on both sides of a new road leading out of the south-eastern side of Upper Tooting-road and a house on the north-western side of Ravenfield-road, Tooting (Messrs. Swain & Selley).—Consent.

Width of Way.

Holborn.—Erection of a building on the southern side of Alfred-mews, Tottenham Court-road (Mr. G. Vernon for Minerva, Ltd.).—Consent.

Holborn.—Extension of covered way over entrance to Robin Hood-yard, Holborn, from Leather-lane (Mr. J. Sawyer for Mr. A. W. Gamage, Ltd.).—Consent.

Islington, North.†—Addition at the rear of Nos. 490 and 492, Holloway-road, Islington (Mr. C. T. Lee for the London County and Westminster Bank, Ltd.).—Refused.

Lewisham.—Open shed at the rear of buildings on the northern side of Houston-road, Forset-hill (Messrs. J. Carter & Co.).—Consent.

St. George.—Erection of an addition to Meeting House-buildings, Meeting House-alley, Stepney (Mr. C. R. Price for Messrs. E. B. Dive & Co.).—Consent.

Lines of Frontage and Space at Rear.

Wandsworth.—Erection of buildings on the south-western side of Mitcham-road, Tooting, between the "Horse and Groom" public-house and No. 20 (Mr. E. R. Weaver for Messrs. Browning & Hiller).—Consent.

Width of Way and Height of Building.

Holborn.—Erection of buildings abutting upon Brooke-street, Fox-court, and Holborn-buildings, London (Mr. F. Schooling for the Prudential Assurance Company, Ltd.).—Consent.

Lines of Frontage and Construction.

Battersea.—Temporary coffee-stall in front of No. 75, Falcon-road, Battersea (Mr. E. S. Walker).—Consent.

Clapham.—Showcase erected in front of No. 110, Clapham Park-road, Wandsworth (Mr. A. E. Peacock).—Refused.

Hackney, Central.—Showcases of a temporary character in front of No. 90A, Southgate-road, Hackney (Mr. W. J. Mason).—Consent.

Hampstead.—Wood and iron shed and greenhouse at No. 6, Briardale-gardens, Hampstead, abutting upon Clorane-gardens (Mr. R. B. B. Wimbush).—Consent.

Wandsworth.†—Temporary motor-house at the rear of No. 163, Mitcham-lane, Streatham, next to the south-western side of Fernthorpe-road (Messrs. J. H. Jenkin & Co. for Dr. Constable).—Consent.

Wandsworth.—Wood and iron motor shed at "Laurel Bank," Upper Tooting Park (Messrs. Jones Brothers for Mr. L. H. Nott).—Refused.

Width of Way, Lines of Frontage, and Construction.

Lewisham.—Wooden shop in front of No. 72, Ladywell-road, Lewisham (Mr. J. Nicholson).—Consent.

Wandsworth.—Retention of a water-closet and coal store at Roehampton House, on the eastern side of Roehampton-lane, Putney (Mr. W. J. Parker for Mr. A. M. Grenfell).—Consent.

Wandsworth.—Tool shed of a temporary character at Roehampton House, on the eastern side or Roehampton-lane, Putney (Mr. W. J. Parker for Mr. A. M. Grenfell).—Consent.

Lines of Frontage, Deviation from Certified Plans and Projections.

Marylebone, West.—Addition to the Florence Nightingale Hospital for Gentlewomen, Lissongrove, St. Marylebone (Mr. C. W. Ferrier for the Trustees of the Florence Nightingale Hospital for Gentlewomen).—Consent.

Space at Rear.

Deptford.—Erection of buildings upon land known as the "Show Yard," Deptford High-street (Mr. C. Cain).—Consent.

Kennington.—Erection of a building upon the site of Nos. 79, 80, and 81, Albert-embankment, Vauxhall, with an irregular open space at the rear (Messrs. Goodwyn & Sons for Messrs. Harvey & Thompson, Ltd.).—Consent.

Separation and Alteration of Buildings.

Paddington, South.—One-story shop at No. 40, Queen's-road, Bayswater (Messrs. Veale & Gibbs).—Consent.

Formation of Streets.

Brixton.—Formation or laying-out of a street for carriage traffic to lead out of the southern side of Acre-lane, Brixton (Mr. H. B. Michell).—Refused.

Wandsworth.—Formation or laying-out of a new street for carriage traffic to lead from Nightingale-lane to Temperley-road, Balham (Msesrs. E. Evans & Sons for Mr. E. Evans).—Consent.

Wandsworth.—Formation or laying-out of three streets for carriage traffic upon a site on the eastern side of Valley-road, Streatham (Mr. E. B. I'Anson for the South London and Streatham Estates, Ltd.).—Refused.

Cubical Extent.

Hammersmith.—Additional cubical extent in respect of a proposed bakery addition at the premises of Messrs. J. Lyons & Co., Ltd., Cadby Hall, Kensington (Messrs. Holman & Goodrham).—Consent.

Woolwich.—Erection of a building exceeding 250,000 cubic ft. in extent to abut upon the eastern side of Harden's-manorway and the northern side of Westfield-street, Woolwich (Messrs. Siemens Brothers & Co., Ltd.).—Consent.

Woolwich.—Erection of a building upon a site abutting upon the southern side of Green-lane and the western side of Henley-road, Woolwich (Mr. B. Dawson).—Consent.

Uniting of Buildings.

City of London.—Opening at the first-floor level between No. 17, Bread-street-hill and No. 202, Upper Thames-street, City (Mr. G. H. Greatbach).—Consent.

City of London.—Doors of fire-resisting hardwood and glazing in lieu of iron doors to certain openings in the division wall of a proposed building on the site of Nos. 8-11, Paternoster-row, City (Mr. R. Angell).—Refused.

Finsbury, East.—Uniting of Nos. 6 and 7, Charterhouse-buildings, Goswell-road, Finsbury (Mr. P. B. Tubbs for Mr. H. T. Tubbs).—Consent.

Westminster.—Opening at the first-floor level between Nos. 7 and 8, St. Matthew's-street, Westminster (Mr. F. Whittlesea for the Governors of the Greycoat Hospital).—Consent.

The recommendations marked † are contrary to the views of the Metropolitan Borough Councils concerned.

PROJECTED NEW BUILDINGS IN THE PROVINCES.*

ABERDEEN.—Additions, headquarters, Royal Field Artillery (2,300*l.*); Mr. A. H. I. McKinnon, 245, Union-street, Aberdeen. Premises, Union-street, for Y.M.C.A. (2,000*l.*); Messrs. Sutherland & George, architects, 26, Crown-street, Aberdeen. Premises for Messrs. Milne Brothers (2,000*l.*); Mr. W. E. Gauld, architect, 11A, Dee-street, Aberdeen. Rink at Recreation Institute (7,000*l.*); Messrs. F. & A. Milne, 136, Wellington-street, Glasgow.

Cathcart.—Hall (2,000*l.*); Messrs. McWhannell & Rogerson, architects, 58, West Regent-street, Glasgow.

Dumbarton.—Additions to combination poor-house (2,700*l.*); Mr. A. C. Denny, architect, 37, Church-street, Dumbarton.

Dunfermline. — Additions to gaswork (7,000*l.*); Mr. W. R. Maxwell, Surveyor, Town Hall, Dunfermline.

Durham. — Ladies' lavatories and conveniences; Mr. J. T. Pegge, Surveyor, Town Hall, Durham.

Edinburgh.—Territorial drill hall, Claremont-crescent (7,000*l.*); Mr. T. Duncan Rhind, architect, 28, Rutland-street, Edinburgh. Extensions to works of Messrs. R. Laidlaw & Sons, Ltd.; Messrs. J. R. & E. E. Pearson, architects, 92, Hanover-street, Edinburgh. Baths at Craglieth Poorhouse (2,000*l.*); Mr. R. M. Cameron, architect, 53, Great King-street, Edinburgh. Extensions to works of Messrs. J. H. Smith, Ltd., chemists (2,250*l.*); Mr. R. R. Grive, Washington-lane, Edinburgh. Buildings, Castle-street (1,800*l.*); Messrs. Peddie & Forbes Smith, 8, Albyn-place, Edinburgh.

Folkestone.—The following plans have been passed:—Eight houses, Shorncliffe-station-road, for Mr. W. Davis, architect and builder. Additions to garage, rear of Shellons-street, for the Folkestone and Sandgate Motor Company; Mr. A. R. Bowles, architect; Mr. F. G. Simpson, builder. Additions to Castle Glen, Castle-road, Sandgate, for Mr. A. A. Bendon; Mr. A. B. Bowles, architect; Mr. O. Marx, builder.

Langside (Glasgow). — Picture theatre (2,200*l.*); Mr. Henry Dewar, architect, 217, St. Vincent-street, Glasgow.

Libberton.—School for Libberton School Board (5,000*l.*); Messrs. Traill & Stewart, architects, 33, High-street, Lanark.

Paisley.—Extensions to works of Messrs. McCullum Leighpark (2,000*l.*); Messrs. J. Craig, Barr, & Cook, architects, 13, St. James's-place, Paisley. Restoration of abbey (30,000*l.*); Mr. P. McGregor Chalmers, architect, 95, Bath-street, Glasgow.

Perth.—Premises for Messrs. John Dewar & Sons, Ltd.; Mr. H. E. Clifford, architect, 225, St. Vincent-street, Glasgow. Letters and parcels building, H.M. Office Office of Works, Edinburgh. Bonded store (30,000*l.*); Mr. W. H. E. Clifford, architect, 225, St. Vincent-street, Glasgow.

Poole.—Fish market (950*l.*): Mr. S. J. Newman, Surveyor, Town Hall, Poole.

Portsmouth.—Isolation hospital at Lunatic Asylum (16,000*l.*); Mr. J. E. Ruke, Prudential buildings, Portsmouth.

Redruth.—Museum for the Royal Institution of Cornwall; Mr. Sampson Hill, architect, Green-lanes, Redruth.

Rodbourne Chiney.—School: Mr. R. G. Powell, Surveyor, County Hall, Trowbridge, Wilts.

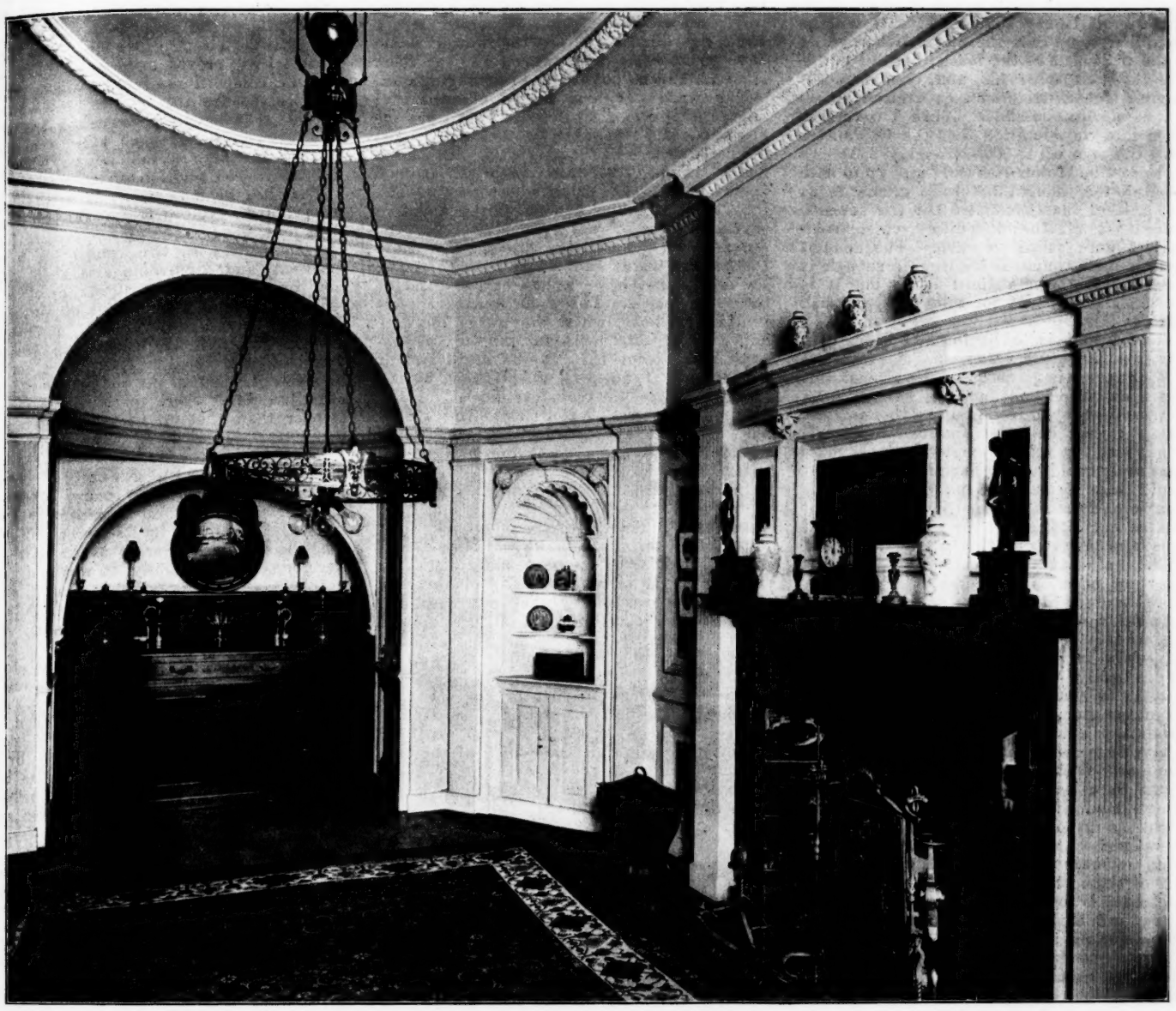
Sheffield.—Enlargement of school, Hammerton-street (400 extra places); Mr. G. S. Baxter, Secretary, Education Committee, Town Hall, Sheffield. Alterations to the Hillsborough Depôt; Mr. F. E. P. Edwards, City Architect, Town Hall, Sheffield. Offices, etc., at Penistone-road New Depôt (4,930*l.*); Messrs. G. Longden & Son, Ltd., builders, Parkwood-road Works, Neepsend, Sheffield.

Swindon.—Buildings (1,385*l.*); Mr. A. J. Taylor, architect, New Bond-street, Bath; Mr. A. J. Colborne, builder, Swindon.

Teignmouth. — Electric theatre; Messrs. Thornley, Rooke, & Barron, architects, The Crescent, Plymouth.

Watford.—Bakery, Brixton-road (3,120*l.*), for the Watford Co-operative Society; Mr. W. H. Syme, architect, 58A, Vicarage-road, Watford: Mr. William Payne, builder, Leavesden, near Watford.

* See also our list of Competitions, Contracts, etc., on another page



An Interior, Talbot-square, Hyde Park.

Mr. Francis H. Bulmer, A.R.I.B.A., Architect.

A SCHEME OF DECORATION.

WE illustrate a reconstruction, by Mr. Francis H. Bulmer, of the dining-room at No. 15, Talbot-square, Hyde Park, W., a typical Victorian town house. The splay so often taken off to make room for the stairs in the hall in the smaller type of house, and which leaves the room so painfully lacking in symmetry, was taken advantage of and repeated on the fireplace side, the space in the angle being utilised in the manner shown, *i.e.*, a cupboard fitment. The cone and arched recess were in response to an idea of the owner of making the sideboard a permanent fixture with service lift at side, access being by means of a vertical sliding, the panel under the cone space for this feature being taken out of the room in the rear, now used as a cloakroom.

The panelling is in whitewood painted with panels covered with dark-red canvas, the door, fireplace, and sideboard of dark Spanish mahogany, executed by Messrs. J. Garvin, of Aberdeen; the plaster cornice and elipse were by Messrs. Jackson, of Rathbone-place, Oxford-street, W.

HOSPITAL COMPETITIONS.

IN our leading article this week we refer to some remarks which appear in the issue of March 2 of our contemporary the *Hospital* in reference to competitions for hospitals, and especially as to the recent competition for the East Sussex Hospital, Hastings. We consider the matter of sufficient importance to quote at length from our contemporary.

"We have often urged," says the *Hospital*, "that in this country there is at present no adequate system for securing the selection by competition of the best plans submitted, much less of providing hospital committees with a guarantee that the new hospital when erected will be thoroughly up-to-date, modern, and complete in every department. One practical reform which the architectural profession should insist upon, so far as the Royal Institute of British Architects is concerned, is the selection of a panel of experienced architects, competent on their merits to act as assessors. Another is that the selection should never be left to the decision of one assessor, whoever he may be, for the reason that a modern hospital is many-sided and that no architect by himself has the knowledge to enable him to judge which out of many plans, so far as the administration and requirements of a modern hospital are concerned, is in fact the best. An architect may, if he is conscientious, knowledgeable, experienced, and thorough, rightly be called upon to decide most points concerned with buildings, as such, which appertain to the professional work of an architect. For all the rest it is essential that there shall be associated with him a competent hospital expert who is admittedly an authority on the many technical and administrative matters which must materially affect a just and satisfactory decision as to the respective merits of a number of plans for a new hospital submitted in competition.

The causes of failure which have been apparent in the selection of plans in more than one recent competition in this country are every one of them due to absence of thoroughness on the part of the assessor, or to a want of thoroughness or of knowledge, or of practical hospital experience, or of a judicial mind to enable him first thoroughly to master and appraise all the conditions of competition and to disqualify every plan which does not comply with them. When a Committee instructs the assessor to draw his conditions to include a hospital of a given number of beds not to exceed the maximum sum, such assessor is bound by his instructions, and should disqualify all competitors who submit plans the estimated cost of which exceeds the amount fixed for the guidance of every competitor.

This question is a very grave one, and its gravity increases with every competition. . . .

By way of illustration we publish this week criticisms on the awards in the most recent competition, in which no fewer than fifty-two sets of plans were submitted for adjudication and selection. As the immediate question affects primarily architects as a body, we have asked a Fellow of the Royal Institute of British Architects of great experience and position to study the whole of the plans submitted, to compare them with the plans selected, and to give our readers the benefit of the results he has arrived at. This special Report is the first of the two articles which follow. The second communication has been sent to us spontaneously by another Fellow of the Royal Institute of British Architects, who has had considerable practical experience in hospital construction and hospital competitions of all kinds."

In the course of the special Report on the East Sussex Hospital, Hastings, the writer says :—

"The site on which the new buildings are to be erected is about 4 acres in extent, and, while an excellent one in point of position and aspect, is a peculiarly difficult one to deal with on account of the levels. In shape it is roughly triangular, and along the whole of its south boundary abuts upon a public road. The general surface of the ground abutting on the road varies from about 7 ft. at the east end to 20 ft. at the west end above the level of the footpath, and the site itself has a fall of about 60 ft. from west to east, and from north to south is approximately level. Crossing the site about midway in its

length is a bank with a fall of about 7 ft. The subsoil is sandstone rock. It will be seen, therefore, that the main difficulty lies in the treatment of the levels, both of buildings and approach roads, and, on economical grounds, the avoidance of excavation in the rock as much as possible. When it is further taken into consideration that the Committee fixed the sum of 35,000*l.* (roughly 350*l.* per bed) as the total cost of an up-to-date hospital, the thought naturally occurs to us that neither the Committee nor the assessor realised at all the difficulties which competitors were asked to solve. The amount fixed as a maximum is inadequate enough if the site had been a dead level, but it is hopelessly insufficient for a building on such a site as this.

The hospital is to be for 102 beds, with provision for future extension. No information, however, is given as to the size of this future extension; in fact, in answer to a question put by a competitor, the assessor says, "Design only for specified buildings, with room for future extension." A more inept reply could hardly have been made. It should have been quite possible to decide upon some figure for the ultimate number of beds on the site, and clear directions ought to have been given on this point. . . .

The limit of cubic space (the far more important question of floor area is not mentioned) is fixed at 1,400 for all wards except those for children, which is fixed at 1,000 ft. The schedule of instructions is a long one, and while in some instances it goes into minute details, in others it is drawn so carelessly as to give rise to an inordinately long list of questions by competitors in order to elucidate the meaning. Points which ought to have been settled definitely have been left open, while others on which competitors should have been allowed a free hand are rigidly fixed. For example, information is sought as to the numbers respectively of sisters, nurses, and probationers, the requirements including separate sitting-rooms for each of these classes. The only information vouchsafed is that there would be about seven sisters, and that a common room for nurses and probationers would be accepted. Surely it should not be beyond the power of the authorities to say exactly how many sisters would be required!

A curious requirement in the schedule is for "patients' boxrooms," and on a competitor asking for what purpose these are required the answer is given, "Lumber-rooms, etc."! The question is asked whether the nurses' water-closet in the ward block may be in the sanitary tower, and the answer is, "Not desirable." Why not desirable in the name of common sense? Appended to the schedule is a list of recommendations by the Committee, most of which would have been better omitted altogether. The impression left in our mind after reading the schedule and the questions by competitors, with the assessor's replies, is that the whole scheme has been carelessly drawn up and shows in many instances a lamentable lack of knowledge on the part of their adviser.

When we come to examine the plans we are at a complete loss to understand how any assessor with any knowledge of hospital planning could have arrived at such a decision as has been given in this case. Of the three premiated plans, Nos. 1 and 2 ought not to have been placed in the first half-dozen, and No. 3 is superior to the other two in almost every point. The designs as a whole are, it must be confessed, disappointing; comparatively few of the competitors have made any attempt to construct their roads economically, and many have been led into the error of multiplying entrances to get over the difficulties of gradients.

In the design placed first the road leading to the mortuary has a slope of 1 in 3 as calculated from the figured levels, although the elevation shows a nearly level approach. The road to the out-patient department has a slope of 1 in 4·7, and that to the main administration block a slope of 1 in 5. Needless to say that such gradients are wholly impossible for wheeled traffic and quite steep for foot traffic. These points alone ought to have disqualified the design.

Turning to the plans, we find the out-patient department and the dispensary placed at a level 16 ft. below the ward corridor, the only connexion between the two being by two long flights of stairs within a covered way. All medicines, etc., therefore, served from the dispensary for the wards would have to be carried up these stairs, as there is no lift and no possibility of arranging one.

The ward pavilions are so planned that when the future extension is carried out the eye wards and two of the two-bed wards must be destroyed. The eye wards, instead of being grouped together with a common operation-room, are placed one with the male, the other with the female wards, and two operation-theatres are provided. On the ground floor no sanitary provision is made for the eye wards and the two small wards, the only offices being at the extreme end of the large wards. The same remark applies to the first floor, where are wards for four and two patients with no sanitary accommodation, except that at the south end of large ward. Influenced, we presume, by the absurd answer to the question as to the position of nurses' water-closet, the author has arranged these offices off the main corridor—about the most inappropriate position he could have chosen.

In many respects the design placed second is superior to that placed first, but here again the difficulty of levels is not dealt with in a satisfactory way. The design placed third is, as we have said, distinctly superior to the other two. The planning of the roads is carefully worked out with due regard to the levels of the site. In point of general planning the design shows much greater knowledge of the subject than either Nos. 1 or 2.

The out-patient department is not well arranged, the author having apparently thought more of getting a good hall for concerts and large meetings than of the convenient working of the department. This is perhaps the weakest part of the plan, which is on the whole a good one."

In the second contribution to our contemporary, the writer says:—

"The competition for the East Sussex Hospital has proved to be a difficult problem for the competitors, few of whom seem to have solved the perplexities of the site, if, indeed, they have realised what it involved. The assessor must have also been embarrassed, as the selected design ignores all difficulties and solution of levels.

The site, ideal in itself, is on the heights with a bird's-eye prospect of the sea, situated in a pine wood. The only approach is from the main road to Ore, which has a steep gradient, and the frontage is about 700 ft. long on a perpendicular bank of stone and loam. This bank is about 8 ft. above the path at the lower end and over 20 ft. at the upper, the site falling in three terraces. The problem was, therefore, to get from a roadway of steep gradient to the top of the site, and, secondly, when there to conquer a gradient steeper than that to the roadway beneath, dropping together 40 ft. The third problem was to place the buildings in the most economical way with serviceable and equal levels and to procure easy access with a minimum of roadmaking on an expensive site.

The beautiful site by its inaccessibility has long been on the market as unsuitable for development. Naturally, it would do for a hospital, and it would have done provided that a suitable design had been selected. That this has been the case we have grave reason to doubt. The assessor's conditions show a lack of knowledge both of the site and the application of the conditions thereto; it being assumed that the site was level. From an examination of the selected design it is clear that the difficulties have been ignored, and this has not been recognised by the assessor. The cost was stipulated as being an essential in the selection, 35,000*l.* being the sum that the committee would have avail-

Rome, S. Carlo a' Catinari. Cappella di S. Cecilia (c. 1685). By Antonio Gherardi.
(From Dr. Ricci's "Baroque Architecture and Sculpture in Italy." Heinemann.)

able. The selected design is about 7,000*l.* above the sum fixed as essential in the selection. I believe that with care a much lower figure might be reached."

We may add that the first premiated design appeared in the *Builder* for February 16, and the second and third in our last issue, March 1.

BOOKS.

Baroque Architecture and Sculpture in Italy. By CORRADO RICCI. (William Heinemann. Quarto. 25s.)

THE quality of imagination is especially necessary in estimating the real artistic value and effect of the work of this period, whether it is shown in symmetrical drawings to measurement or in picturesque photographs such as this volume contains.

It needs the stereoscopic camera to reproduce at all faithfully romantic effect of the grouped columns, the receding planes, and enhanced perspective of terrace upon terrace and chiaroscuro of intricate forms which the prodigal fancy of the ingenious Jesuit artists of the late XVIIth and early XVIIIth century produced. Perhaps the art of Mr. Sargent in his portrayal of the examples of this period is the best record to which we can turn, and many of us who have seen the impressions of Baroque Italy, with which he has been so largely occupied recently, have been further stimulated to a study of much that we have been schooled to ignore or despise. Much in the same way that we discover unsuspected beauties in such a period of costumes as the Victorian, for example, we are beginning to enjoy the methods of what we may call the afterglow of the Renaissance. Tiepolo now ranks with the immortals, and, in like manner, the expression of the temperament of his period in other mediums than paint has now come within our range of understanding.

We can imagine the exclamation of the enlightened at the above statement, but the fact remains that the student of a generation ago would have been advised to abstain as from poison from a study of many of the best examples contained in this volume. Genoa, with its streets of palaces that might line Pall Mall itself and yet be habitable, has now become as well known and appreciated as Florence in her earlier period, and we are certainly the gainers. The plasticity of the forms employed in the Baroque has shown us that practically any internal arrangement which has the quality of orderliness can be treated externally as a work of art in the traditions of the classic manner, and not the least important lesson which we have digested from our wanderings in these lands neglected of our fathers is the one that mouldings and details have their relation to the building they adorn as much as to the classic sources from which they are derived. Perhaps in no other period, except in the later French Gothic, have they been so intelligently and consciously employed.

The dangers of an unintelligent adaptation of this manner are too apparent for discussion, but we may mention that many a façade seen in sharp perspective in, say, one of the narrow streets of old Venice would come as a surprise when seen in full elevation, and we might easily regret with all the contempt of the complacent purist a motive that its real purpose was an inspiration. For those, however, to whom it is necessary to explain everything we do not commend this volume; the plagiarist will find it entirely after his own heart, but he will be left further removed from the principles of true design than ever, and, however much we may deplore the alterations which may result, we must at the same time remember that no influence so powerful as that exercised by the Baroque can work entirely from good. Great powers are to be wielded only successfully by corresponding individualities.

The Old Houses of Shrewsbury: Their History and Associations. By H. E. FORREST. (Shrewsbury: Wilding & Son, Ltd. 1s. net.)

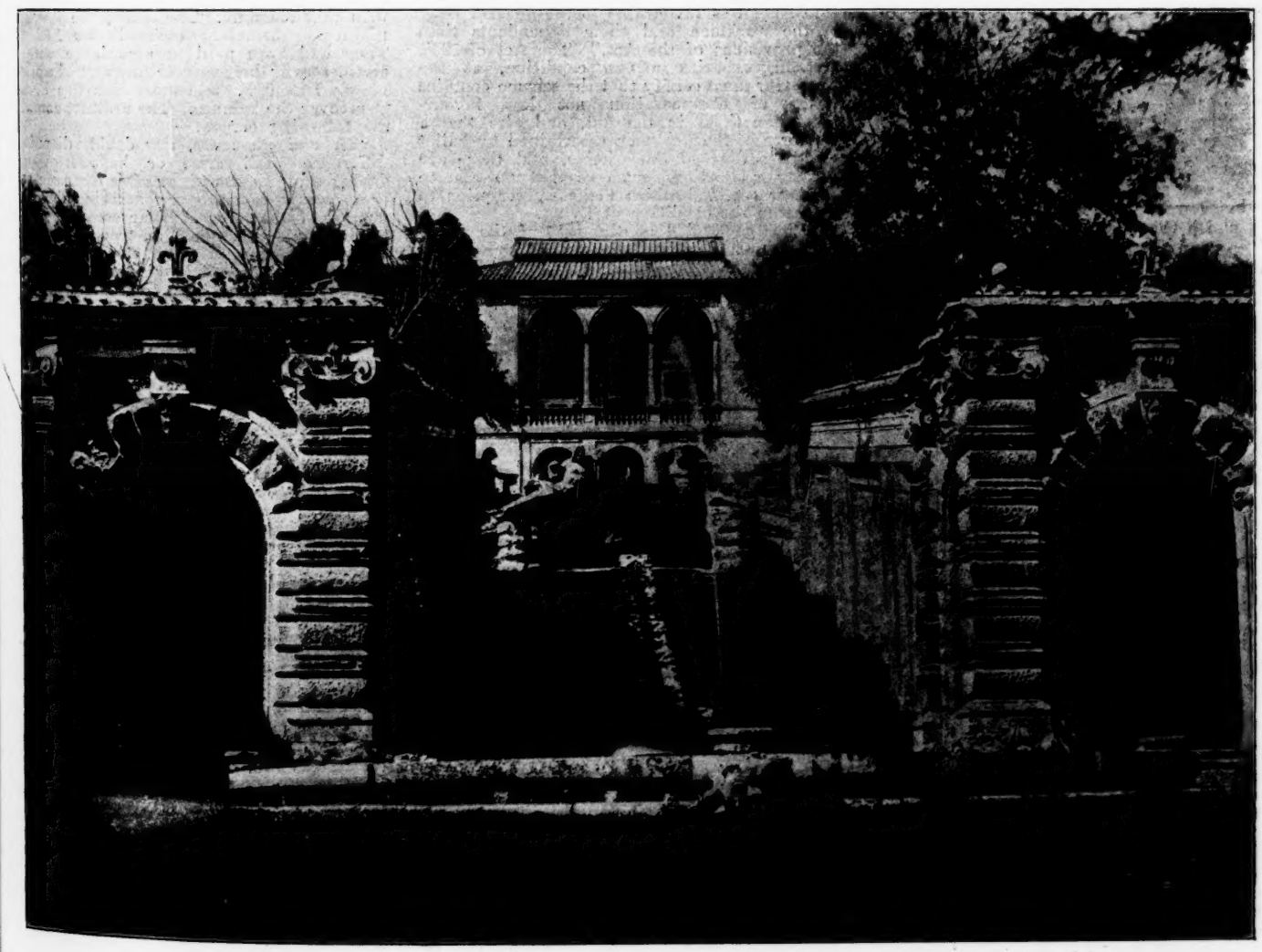
THIS little work is not an ordinary local guide to a town, though the author admits that it is issued with the hope of adding to the attractions of Shrewsbury; it is, though a small book of under one hundred pages, the kind of work which should induce the townsfolk to take a loving and intelligent interest in the houses in their midst, that being another, and a very worthy one, of the author's hopes. An endeavour has been made to give a succinct account of the interesting old buildings of Shrewsbury, "partly by collating all available data regarding them and partly by careful study and comparison of the structures themselves." It is a useful little work, containing some excellent photographic reproductions.

Our Homeland Churches, and How To Study Them. By SIDNEY HEATH. With Illustrations from Drawings by J. R. LEATHART and others, and from photographs. (London: The Homeland Association, Ltd., Chandos-chambers, 15, Bedford-street, Strand, W.C. Size 5½ in. by 4¼ in. Cloth, 2s. 6d. net.)

THIS book was originally issued as one of the Homeland Handbooks, and has been out of print for some time. In preparing a new edition opportunity has been taken to remodel, to considerably extend, and to reillustrate the volume, while it has been thought desirable to transfer it to the handier form of the Homeland Pocket Books. A new feature is a series of architectural details by Mr. J. R. Leathart, and the glossary has been expanded to three times its original length. The work is a clear and simple introduction to the study of the churches of the homeland on their architectural side, and the author traces the history and development of English church architecture in a useful way. He has produced a handy little volume, which should do much to promote an intelligent and growing interest in our churches.

***The Year's Art*, 1912.** Compiled by A. C. R. CARTER. (London: Hutchinson & Co., Paternoster-row. 5s. net.)

THE present edition of "The Year's Art" is the thirty-third annual issue of a very



Caprarola, near Rome, Palazzo Farnese. Stairway of XVIIth Century.
(From Dr. Ricci's "Baroque Architecture and Sculpture in Italy." Heinemann.)

useful work, which is described as "a concise epitome of all matters relating to the arts of painting, sculpture, engraving, and architecture, and to schools of design, which have occurred during the year 1911, together with information respecting the events of the year." The art events of the year are chronicled, and the information is easily found. The work contains several full-page illustrations.

The Antiquary. Volume XLVII. (London: Elliot Stock, Paternoster-row, E.C. Price 7s. 6d.)

THIS is the volume from January to December, 1911, of a valued magazine devoted to the study of the past. Each monthly issue of our contemporary contains a number of interesting notes and also articles and illustrations of an archæological and historical character, while articles on old castles, churches, etc., not infrequently occur in its pages. The volume is bound in an attractive manner, and we are glad to call attention to the forty-seventh volume of an admirable magazine.

Kæmmerer's Practical and Theoretical Letter-Book. Edited by ARTHUR SEYMOUR JENNINGS. With 140 plates and text. (London: The Trade Papers and Publishing Company, Ltd., 365, Birkbeck Bank-chambers, High Holborn, W.C. Price 30s. complete.)

IN this work the experienced craftsman will find much of a useful and suggestive nature, while for the student there are many helpful hints as to spacing and construction of letters, both in the text and plates. The book is also published in sections at 4s. 6d. each, which is a great convenience for those who would find no use for the foreign alphabets included in the complete edition.

Country Life. Volume XXX. (London: 20, Tavistock-street, Covent Garden, W.C.)

THIS is the volume of our contemporary for July to December, 1911, and a glance at its contents shows it to be an attractive volume. It contains many readable articles and a large number of admirable illustrations, including a good many architectural and decorative as well as nature subjects. The work is excellently printed, and makes an interesting volume.

Copyright Law and the Copyright Act, 1911. By HENRY HURRELL. (Waterlow & Sons. 3s. 6d.)

THE new Copyright Act comes into force on July 1, and architecture is included. Those who build would do well to study the clauses with which they are specially concerned, and the opportunity is given in Mr. Hurrell's book, which, besides the Act, observations upon copyright generally, a table of cases and a translation of the revised Convention of Berne, 1908, contains a treatise on French Copyright Law, by M. Maurice Théry. Many different opinions have been expressed on the desirability of creating copyright in architecture. Sir R. S. Lorimer, Mr. Ernest Newton, Mr. Voysey, Mr. Horder, Mr. Kitson, Mr. Quennell are among those who have decided against the benefit to be obtained from copyright. But the Royal Institute of British Architects gave official support to the scheme, and the result will be watched closely. If in practice plagiarism can be checked without retarding architectural evolution the new provisions of the Act will prove the wisdom of the promoters of the new legislation.

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday in the County Hall, Spring-gardens, S.W., Mr. E. White, Chairman, presiding.

LOANS.—Loans are to be made to borough councils as follows:—Chelsea, 5,300*l.* for paving works; St. Pancras, 3,355*l.* for a housing scheme; Shoreditch, 3,480*l.* for repaving works; and Stepney, 10,250*l.* for electricity mains.

NEW SCHOOLS.—In a report of the Education Committee it was stated that it is proposed to erect new schools as follows:—Clapham-common, for 800 children; Nine Elms, for 1,000 children; Clapham Junction, for 1,300 children; Battersea Park, for 1,500 children; Norwood, Acre-lane, for 1,000 children; Greenwich, for 500 children; Sydenham, for 500 children; Marylebone, for 500 children; Paddington, for 400 children; Bayswater, for 500 children; Balham, for 1,000 children; and St. Ann's-hill, Wandsworth, for 1,000 children.

It is also proposed to erect a new Roman Catholic school at Limehouse to provide accommodation for forty mentally defective and forty physically defective children.

THEATRES, ETC.—The following drawings have been approved by the Theatres and Music Halls Committee:—Imperial Hotel, Russell-square—electric lighting and heating arrangements in extension; 396, Mile End-road—arrangement of a portion of the entrance vestibule as a waiting space; Queen's Hall, High-street, Peckham—erection of an electrically illuminated outside sign; Wesleyan Methodist Hall, Westminster—installation of a switchboard in connexion with the secondary system of the lighting.

LEGAL COLUMN.

Workmen's Compensation.

The Court of Appeal in the case of Godwin *v.* The Lords Commissioners of the Admiralty have had to consider a question under the Workmen's Compensation Acts of some complexity. A bricklayer employed in the Portsmouth Dockyard sustained an injury to his hand, which subsequently necessitated the amputation of a finger. It appeared that under the Workmen's Compensation Act, 1897, a scheme in substitution of the Act had been certified by the Registrar of Friendly Societies and subscribed to by the workman, which, on the passing of the Workmen's Compensation Act, 1906, was recertified by the Registrar of Friendly Societies, and the point in dispute was whether this scheme was in force so as to bind the workman, or whether he could claim the ordinary compensation in an arbitration. Under sect. 3 of the Act of 1897 the Registrar had to certify whether the scheme "is on the whole not less favourable to the general body of the workmen and their dependants than the provisions of the Act." The Act of 1906, sect. 3, contains a new condition, as the Registrar must certify that the scheme contains scales of compensation not less favourable than those in the Act, and also that a majority of the workmen ascertained by ballot are in favour of the scheme, and there are further restrictions, such as that no scheme shall be certified which makes subscription to a scheme the condition of living.

It was contended on the part of the workman, who had subscribed to the scheme when recertified, that the scheme was invalid because no ballot of the workmen had been taken on the recertification of the scheme. The majority of the Court held that where a scheme is recertified under sect. 15 of the Act of 1906 there is no justification in insisting on a fresh ballot; but Lord Justice Fletcher Moulton dissented from this view, and, having regard to the terms of sub-sects. 3 of sect. 15, there is much to be said in favour of the opinion he expressed. This sub-section provides:—"The Registrar shall recertify any such scheme," *i.e.*, a scheme under the Act of 1897, "if it is proved to his satisfaction that the scheme conforms, or has been so modified as to conform, with the provisions of this Act as to schemes."

It is a great pity that the Legislature should have used language so ambiguous on a point of such importance.

London Drainage By-Laws.

In our Law Reports recently we reported a case heard before a London Police Magistrate in which the Chairman of the London County Council was summoned for having soil pipes within the house constructed of iron instead of drawn lead, as required by the London County Council by-laws. There was also a summons for having failed to deposit plans, and in respect of this latter summons a nominal penalty was imposed. As regards the other summons, the learned magistrate dismissed it on the ground that the Council had not convinced him that the whole pipe was within the house. This decision strikes us as somewhat curious, because we cannot see in the by-laws that there is any question of the whole pipe being within the house. Pipes inside buildings are very properly disallowed, but in the case of existing buildings the by-law provides an exception "when it shall be necessary to construct such soil pipe within the building," in which case its construction is prescribed. The by-law following also deals with connexions of lead pipes with iron pipes. To us it seems that an ordinary individual construing the by-law would see that any part of a soil pipe within the house must be constructed of drawn lead, and that its ultimate destination outside the house has nothing to do with the construction of any pipe within the house, although it may be jointed with an iron pipe outside. In the case under discussion the pipe, though partly within the house and partly without, was all of iron, and if any effect is to be given to the by-laws this would clearly seem to have been an infringement.

LAW REPORTS.

COURT OF APPEAL.

(Before Lords Justices VAUGHAN WILLIAMS, FARWELL, and KENNEDY.)

Action by Contractors against Bristol Corporation:

John Aird & Co. *v.* The Corporation of Bristol.

IN this case the defendants appealed from an order of Mr. Justice Scrutton in Chambers, who, affirming the order of Master Macdonell, refused to stay the action and to refer the matters in difference between the parties to the defendants' engineer, Mr. William Wilkinson Squire, the arbitrator named in the contract.

Sir R. Finlay, K.C., Mr. Gore Browne, K.C., and Mr. Inskip, appeared for the appellants; and Sir A. Cripps, K.C., Mr. Upjohn, K.C., and Mr. L. Macassey, for the respondents.

Sir Robert Finlay said that the action was brought by the plaintiffs, the well-known contractors, against the Bristol Corporation to recover 171,215*l.* for work and labour done and materials provided in connexion with the construction of an additional dock and other works at Avonmouth, and damages for breach of contract. The contract involved very heavy work. It was not a lump sum contract. Attached to it was a schedule of prices, and the contractors were to be paid in accordance with that schedule. The total price which the plaintiffs ultimately claimed was 1,927,977*l.* They had been paid in accordance with the certificates of the Engineer the sum of approximately 1,753,000*l.*, and the action was brought to recover the balance. The contract contained the following clause:—

"If, and whenever, any doubt, dispute, or difference shall arise or happen, whether during the progress of, or after the completion of the works, touching or concerning the works, or any of them, or of their cost, or relating to the quantities, qualities, prices, description or manner of work done or executed, or to be done or executed by the contractor, or to the quantity or quality of the materials to be employed therein, or in respect of any additions, omissions, alterations, or deviations made to, in, or from the works, or any part of them, or touching or concerning the meaning or intention of this specification, or of the schedule of quantities and prices or any part thereof, or of any drawings, instructions, or directions referred to in the said specification, or which may be furnished or given during the progress of the works, or touching or concerning any certificate, order, or award which may have been made by the Engineer, or in anywise whatsoever relating to the interest of the Corporation or of the contractor in the premises, then and in every case such doubt, dispute, or difference shall from time to time be referred to and be settled and decided by the Engineer, who shall be competent to enter upon the subject matter of such doubt, dispute, or difference, with or without formal reference or notice to the contractor or the Corporation, and who shall judge, decide, order, and determine thereon, and that, whether the contract be then existing, or completed, or determined, and who shall have full power and authority to correct and amend any errors or inaccuracies in this specification or in the schedule of quantities and prices, or in any certificate, order, or award made in pursuance thereof; and to the Engineer shall also be referred the final determination of any sum or sums, or balance of money to be paid to or received from the contractor by the Corporation in respect of the works, or any part thereof, or of any matter arising under or in connexion with the contract. Any matter not included above as being subject to the final decision of the Engineer, and which may become a subject of dispute between the contractor and the

Corporation, shall, if so agreed between the parties, be referred for decision to the Consulting Engineers, or failing agreement, to an arbitrator to be appointed by the Board of Trade."

Sir Robert Finlay, continuing, said that the whole of the claim in the present case fell within the terms of the first part of that arbitration clause, as it gave rise to matters which were expressly stated to be matters to be determined by Mr. Squire, who had acted in the matter of the contract for the Corporation. The monies which had been paid by the Corporation to the contractors were in accordance with the Engineer's final certificate. Plaintiffs objected to referring the dispute to Mr. Squire, and in the affidavits they set out a number of reasons in support of that objection. The decisions which he would cite to the Court laid down that there was no valid objection whatever to the inforcement of such an arbitration clause as that to say that it made the Engineer arbitrator in matters in regard to which he had himself played a very considerable part. The advantages of making him arbitrator were obvious. He was familiar with all matters relating to the contract, and it would be most expensive to have to begin *de novo* before a gentleman who was not cognisant with the matters in dispute. There was no legal objection to the Engineer acting as arbitrator, because in his certificates he had taken views which, as arbitrator, he would be called upon to review. Upon Mr. Squire's professional honour the parties had by the contract decided to rely in case of dispute, and he was a gentleman of the highest standard in his profession. In not one single point had the plaintiffs succeeded in taking the case outside the ordinary rule laid down by the authorities.

The learned Counsel read the affidavit of the Town Clerk of Bristol, solicitor to the defendants, who said that the following matters arose on the plaintiffs' claim:—

(*a*) Questions as to the sufficiency or accuracy of the contract drawings, and as to payment for work involved through the rectification of drawings, and as to the non-delivery of the site for the works;

(*b*) Disputes as to the meaning of the conditions of contract as to the date at which a certificate of completion of the works should have been issued, and as to the withholding of retention monies;

(*c*) Disputes as to the alterations of, or additions to, or substitution of the contract works, and as to the payment of the same and for various pieces of work done, and for materials supplied by the plaintiffs in course of the execution of the contract work.

All these, Counsel contended, were matters which it was quite competent for the Engineer to deal with as arbitrator.

The learned Counsel then read the affidavit of Mr. M. R. Aird, a partner in the plaintiffs' firm, which let out six heads, upon which the claim of damages was based.

Mr. Upjohn said he was prepared to withdraw four of those heads, leaving only two, as follows:—

(1) Plaintiffs' claim damages for the failure of the said drawings to represent the nature of the work to be executed under the contract as provided by Clause 6 of the said condition of contract;

(2) Plaintiffs claim damages in respect of the negligence and refusal of the Engineer to consider the elements affecting the cost of additional work under the said contract, for the purpose of settling the price to be paid to the plaintiffs for the additional work.

Sir R. Finlay said Mr. Aird, in his affidavit, complained that the Engineer had, subsequent to the agreement, acted in relation to the plaintiffs perversely, unfairly, and unreasonably, contrary to the provisions of the conditions of contract, and that if he acted as arbitrator he would be called upon to adjudicate on his own contract. If misconduct on the part of the Engineer had been established it would be quite another thing; but it had not been shown that he was an unfit person to arbitrate. It was unfortunate that charges had been made against the Engineer which could not be supported.

Mr. Upjohn: We say that the Engineer consulted the Consulting Engineers, thus in a sense acting as arbitrator without giving us the opportunity of putting forward our views on the matter under discussion. That is a claim, however, in respect of which we shall be unable to establish any legal damage, and it cannot be dealt with in this action.

Sir A. Cripps said they made no aspersions on Mr. Squire's honour. All they said was that he was not a proper person to act as arbitrator.

The learned Counsel, on behalf of respondents, contended that the discretion of the Master and learned Judge below ought not to be interfered with. He submitted that the authorities showed that there were no limits to the cases as to which a judge might exercise his discretion by refusing to stay proceedings, and they further made it clear that where facts arose subsequent to the making of a contract which rendered it unlikely that the appointed tribunal would deal impartially with the dispute an application to stay an independent action ought not to be granted.

At the conclusion of the arguments of Counsel on the 26th ult.,

Lord Justice Vaughan Williams, in delivering judgment, said he was very glad to find that it was not alleged on behalf of the respondents that it was always necessary to show there was misconduct in the sense of involving *mens rea* if it was desired to interfere with the exercise of the arbitrator's powers. In the present case many charges had been made against the Engineer, charges which certainly did involve *mens rea*, and which really imputed moral misconduct to him. Those charges ought not to have been made, and Sir Alfred Cripps had said that he regretted very much that they had been made, and he accepted the position that there was no ground whatsoever for making these charges against the Engineer involving moral misconduct on his part.

He (the Lord Justice) would show what consequences must follow from the fact of such charges having been made. He was not going to say anything inconsistent with the judgment of Lord Justice Bowen in the case of Jackson *v.* The Barry Railway Company. He recognised the full authority of that case, and he did not think that, although certain passages in subsequent judgments had been relied upon as suggesting that that judgment of Lord Justice Bowen should be qualified, it was intended so to do. The principal case which had been relied on by the appellants was G. Freeman & Sons *v.* Chester Rural District Council, and it was suggested that some observations of the Master of the Rolls in his short judgment had in some way modified the judgment of Lord Justice Bowen. He quite understood the arguments that had been put forward, but he did not think those words were intended to have the effect for which the appellants contended. He (the Lord Justice) would act on what had been laid down by Lord Justice Bowen.

In the present case there was one very peculiar circumstance, and that was that of all the matters which had been alleged against the Engineer there were really only two of any substance. As regarded these, they did not arise out of the original agreement between the parties; they did not fall within the schedule of prices where the price paid depended on the original schedule. The affidavits stated that specific agreements had been entered into, and that the Engineer had departed from them. In such a case it was true to say that, in so far as the Engineer differed from the statement that agreements had been entered into and actually denied it, he was really acting as arbitrator in his own case. The question, therefore, to be determined was whether the Engineer had in fact entered into these agreements, and whether he had departed from them. In his judgment there was a strong *prima facie* case made as to the existence of these agreements, as well as a *prima facie* case of a departure from them. He would not go into the details, because the action would have to go on, and it was not desirable at that stage to discuss the evidence. Putting it shortly, he was of opinion that in these two matters it was not desirable that the Engineer should act as arbitrator. In these circumstances, therefore, the appeal failed. As to what ought to happen by reason of these imputations against the Engineer being unnecessarily and unjustly introduced in the affidavits, he thought that the costs below, so far as they had been increased by the charges of moral misconduct against the Engineer, should be borne by the contractors. He thought it was very necessary to mark how strongly the Court thought these charges ought not to have been made. As regarded the costs in the Court of Appeal, he thought they ought to be costs in the cause.

Lord Justice Farwell and Lord Justice Kennedy delivered judgments to the same effect.

FOREIGN AND COLONIAL.

Hotel, Brazil.

Information has been received regarding a proposal to erect a first-class hotel at a seaside resort in Brazil. The construction of a pier similar to those at English bathing resorts is also under consideration. Further particulars may be obtained by British contractors and manufacturers on application to the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall-street, London, E.C.

Building Work, Austria-Hungary.

According to the *Zentral Anzeiger* (Vienna) of February 22, the municipal authorities of Kolozsvár (Hungary) propose to arrange for the carrying out of a number of important works during 1912, including the following:—The erection of schools and other buildings, 1,440,000 kronen; sewerage works extension, 300,000 kronen; enlargement of artificial ice works, 40,000 kronen; street paving, 500,000 kronen; electric works extension, 705,000 kronen; the construction of a market hall, together with city lodging-house, 1,180,000 kronen; erection of workmen's dwellings, 500,000 kronen; fire-station, 200,000 kronen.

OBITUARY.

Mr. G. E. Pritchett, F.S.A.

We much regret to record the death of Mr. George Edward Pritchett, F.S.A., of Oak Hall, Bishop's Stortford. According to the *Hertfordshire Mercury*, the deceased gentleman was the fifth and last surviving son of the Rev. C. R. Pritchett, Rector of Hallingbury from 1835 to 1849. He was born at the Charterhouse, London, where his father was Reader from 1809 to 1835, on June 14, 1824, and he was consequently in his eighty-eighth year. He married in 1864 Sophia Amelia, daughter of the late Rev. W. Gibbs Barker, who predeceased him, leaving three sons and two daughters. Mr. Pritchett was educated at Charterhouse, as were all his sons, and as the oldest Old Carthusian he was present at the recent tercentenary banquet at the Charterhouse. His connexion with the Charterhouse was maintained for fifty years, during which period he was architect and surveyor to the Charterhouse estates, comprising chiefly churches and farms in the counties of Essex, Cambs, and Hunts. He commenced practice as an architect in North-street, Bishop's Stortford, in 1849, and later he had London offices in Lombard-street and Spring-gardens. For some time he was a Lieutenant in the Artillery Company of the old West Essex Yeomanry Cavalry. Mr. Pritchett was also a Fellow of the Society of Antiquaries, a Fellow of the Royal Institute of British Architects, a member of the Council of the Essex Archæological Society, a member of the Essex Field Club, the Röntgen Society, etc. As an architect he was chiefly concerned with ecclesiastical buildings, and among churches, schools, and rectories in Hertfordshire which testify to his work are St. Michael's, Bishop's Stortford, All Saints, Hockerill, Furneaux Pelham, Stocking Pelham, Albury (chancel), Great Hadham, Eastwick, Hoddesdon, Widford, Allen's Green, Hitchin, Sawbridgeworth, and High Wych (church, vicarage, schools, and curatage). In Essex, Suffolk, Cambs, and Hunts there are many other of his works. The Saunder's Memorial in the Chapel of Charterhouse was also his work. He lived to see the schools he built at Harlow and Epping celebrate their fiftieth anniversary, and the completion in December last of Therfield Church, near Royston, the plans for which he drew thirty-nine years ago. Mr. Pritchett built Oak Hall, Bishop's Stortford, in the early sixties. It took three years to complete, and is filled with a valuable collection of local antiquities and curios. The funeral of the deceased took place in Little Hallingbury Churchyard.

EAST LONDON, SOUTH AFRICA.

One of the most promising areas in South Africa is the district surrounding the port of East London. The opportunities which await manufacturers and others are set forth in a book of information and statistics compiled under the joint direction of the East London Municipality and the General Manager of the South African Railways. The book, which bears the title "East London: Commercial Resources and Industrial Possibilities," gives the railway and water rates, particulars of the local markets, the price of labour, full electric light and power, etc., and details regarding the various openings which exist for the establishment of new industries. The book may be obtained gratis on application to The High Commissioner for the Union of South Africa, 32, Victoria-street, S.W.

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointment, xviii.; Auction Sales, xxiv.

Certain conditions beyond those given in the following information are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

*** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.

Competitions.

MARCH 9. — **London, E.C.** — NEW OFFICES.—The Port of London Authority invite preliminary sketch designs for new head offices in Trinity-square, and for laying out remainder of land as a building site. See advertisement in issue of November 24 for further particulars.

MARCH 15. — **Drammen, Norway.**—RAILWAY-STATION.—Particulars from the Norges Statsbaner, Christiania.

MARCH 15. — **Prestatyn, North Wales.** — LAYING-OUT ESTATE.—Lord Aberconway and the Trustees of the Prestatyn Estate invite designs for laying-out of the estate Three premiums are offered. Particulars from 33, Henrietta-street, W.C. See advertisement in issue of January 5 for further particulars.

MARCH 16. — **Harrow.** — PUBLIC OFFICES.—The Harrow-on-the-Hill U.D.C. invite tenders for the enlargement of and alterations to their Public Offices. See advertisement in issue of January 5 for further particulars.

MARCH 25.—**Colchester.** SCHOOL.—Limited to architects practising in the borough.

MARCH 30.—**Edinburgh.**—MEMORIAL TO KING EDWARD.—Limited. See Competition News, p. 151, February 9.

MARCH 31.—**Manitoba, Canada.**—PARLIAMENT BUILDINGS.—The Government of Manitoba invite designs for the new Parliament buildings to be erected in the City of Winnipeg. See advertisement in issue of February 9 for further particulars.

APRIL 4.—**Portland.**—COUNCIL OFFICES.—The Portland U.D.C. invite competitive designs for Council Offices. Premiums of 50*l.* and 10*l.* are offered. See advertisement in issue of February 23 for further particulars.

APRIL 20.—**Birmingham.**—BLUE COAT SCHOOL.—Limited to local architects. Assessors, Mr. G. H. Hunt, F.R.I.B.A., and Mr. C. E. Bateman, F.R.I.B.A. Particulars from the Secretary, the Blue Coat School, Birmingham.

MAY 1.—**Rhos Ruabon.**—PAIR OF WORKMEN'S COTTAGES.—Premiums of 10*l.* and 5*l.* Assessor, Mr. Raymond Unwin, F.R.I.B.A. Particulars from Mr. G. Meirion Griffiths, Rhos Ruabon.

MAY 1. — **Wombwell.**—SWIMMING BATHS.—The Wombwell U.D.C. invite designs in competition for public swimming baths, to be erected in Hough-lane, Wombwell, Yorkshire. Three prizes of the value of 40*l.*, 30*l.*, and 20*l.* respectively are offered for the designs placed first, second and third respectively by the assessor. See advertisement in issue of February 16 for further particulars.

* MAY 15.—**Portland.**—COUNCIL OFFICES.—The Portland U.D.C invite competitive designs and plans for Council Offices. See advertisement in this issue for further particulars.

JUNE 28. — **Hale, Cheshire.**—TOWN PLANNING SCHEME.—Premiums 50*l.* and 25*l.* Particulars from the Council Offices, Hale.

JUNE 30.—**Padiham.**—TOWN HALL, BATHS, ETC.—Premiums 40*l.* and 20*l.* Particulars from Mr. J. Gregson, A.M.Inst.C.E., Surveyor's Office, Padiham.

JULY 1. — **Dusseldorf.** — A plan for the extension of the City of Dusseldorf. Premiums of 1,000*l.* to 375*l.* Conditions on application to the Chief Burgomaster, Dusseldorf. A translation appeared on page 365, September 29.

AUGUST 30. — SAXON SNELL PRIZE. — Fifty guineas; with medal, is offered for essay on a hospital subject. Particulars from the Sanitary Institute, 90, Buckingham Palace-road, S.W.

NO DATE. — **Cardiff.** — FOOTBALL STANDS.—Premiums 30*l.*, 20*l.*, and 10*l.* Particulars from Mr. C. S. Arthur, 53, Queen-street, Cardiff.

NO DATE.—**Jordanhill, Glasgow.**—PROPOSED TRAINING COLLEGE.—Limited to six firms, named in Competition News, December 1, page 635.

NO DATE. — **Ormskirk.** — CLUB-HOUSE.—Competitive plans are invited for proposed club-house for Ormskirk Golf Club. See advertisement in issue of March 1 for further particulars.

NO DATE. — **Sheffield.** — CRIPPLES' HOME. — Limited to local architects. Mr. E. M. Gibbs, F.R.I.B.A., and Mr. F. E. P. Edwards, F.R.I.B.A., assessors.

NO DATE. — **Warrington.** — SCHOOL. — The Warrington Education Committee invite competitive plans for the erection of a public elementary school. See advertisement in issue of February 16 for further particulars.

Contracts.

BUILDING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

MARCH 8. — **Gwernydomen.** — COTTAGE.—Erection of a cottage and set of farm buildings. Plans and specification seen, and quantities from Mr. W. E. R. Allen, Deputy-Clerk of the County Council, Glamorgan C.C. Offices, Westgate-street, Cardiff.

MARCH 8.—**Linthorpe.**—HOUSES.—Erecting five dwelling-houses in Roman-road. Messrs. Moore & Archibald, architects, Prudential-chambers, Albert-road, Middlesbrough.

MARCH 9.—**Shafton.**—SCHOOL.—For erection of Shafton new school. Plans seen, and specifications, with quantities, from the Education Architect, County Hall, Wakefield. Deposit of 1*l.*

MARCH 11. — **Blackwood.**—HOUSES.—For completion of twelve houses in course of erection, for the Gladstone Building Club. Plans and specifications with Mr. R. Simmonds, architect, High-street, Blackwood.

MARCH 11. — **Blaengarw.**—HALL.—Erection of a mission hall. Plans and specifications seen, and quantities from Mr. J. Cook Rees, M.S.A., Parade-chambers, Neath.

MARCH 11. — **Halifax.**—SHELTERS.—Erection of two open-air shelters at the Bermerside Convalescent Home and School. Plans and specifications seen, and forms of tender from the Borough Engineer.

MARCH 11. — **Stacksteads.**—BUILDINGS.—Construction of headquarter buildings, at Stacksteads, for the accommodation of "H" Company, 5th Battalion East Lancashire Regiment. Quantities and forms of tender from Mr. A. Brocklehurst, architect and surveyor, St. James's-chambers, Waterfoot, on deposit of 1*l.*

MARCH 12. — **Bradford.** — WORKHOUSE.—Erection of a workhouse at Daisy-hill. Quantities from Mr. Fred Holland, Architect to the Board, 22, Manor-row, Bradford. Deposit of 1*l.* 1s.

MARCH 12.—**London.**—BATHS.—Erection of a building to contain twelve slipper-baths, with waiting-room, etc., in Fen-street, Tidal Basin. Specification, form of tender, and particulars from Mr. John G. Morley, Borough Engineer, Town Hall, West Ham, E. Deposit of 1*l.*

MARCH 12. — **Staffordshire.** — OFFICES.—The Great Western Railway invite tenders for the erection of two small offices in the Midland Railway Company's Goods Yards at Wednesfield and Willenhall. Plans and specification seen, and forms of tender and quantities at the office of the Engineer at Wolverhampton Station.

MARCH 13. — **Bishop Auckland.** — MORTUARY, ETC. — For erection of a new mortuary and a children's shelter at the Workhouse. Particulars and form of tender from Mr. F. H. Livesay, architect, Bishop Auckland.

MARCH 13.—**Dover.**—REPAIRS, ETC.—For works and repairs to the Duke of York's School. Conditions of contract, form of tender, and particulars at H.M. Office of Works, etc., Storey's-gate, S.W. Deposit of 1*l.*

MARCH 13.—**Hull.**—GREENHOUSE.—For erection of a greenhouse at the East Park. Forms of tender and particulars from Mr. A. E. White, M.Inst.C.E., City Engineer, Town Hall, Hull.

MARCH 13.—**Pontypridd.**—LABOUR EXCHANGE.—Erection of a Labour Exchange in Mill-street. Drawings and specifications seen, and quantities, on deposit of 2*l.* 2s., from Messrs. Arthur Ll. Thomas & Gomer S. Morgan, architects and surveyors, Church-street-chambers, Pontypridd.

MARCH 14.—**Batley.**—VILLA.—For erection of a proposed villa, St. Mary's-avenue. Plans, specifications, and quantities from Mr. Wm. F. Cave, architect and surveyor, Market-street, Heckmondwike, Yorks.

MARCH 14.—**Birmingham.**—ADDITIONS.—Additions and alterations to the Council House, Victoria-square. Drawings and specifications seen, and quantities and form of tender at the Estates Department, the Council House, Birmingham. Deposit of 3*l.* 3s.

MARCH 14.—**Garstang.**—CHAPEL.—For erection of new Wesleyan Chapel, Catterall-lane, near Garstang. Quantities, on deposit of 10s., from Mr. Fred Howorth, architect and surveyor, 6, Cannon-street, Preston.

MARCH 14. — **Rochdale.**—CHAPEL.—Erection of chapel at the Workhouse. Plans, specification, and conditions of contract with Mr. H. H. Clough, architect, Butts-avenue, Rochdale.

MARCH 15.—**Fixby.**—BUNGALOW.—For erection of a bungalow at Fixby, Yorks. Quantities from Mr. N. Culley, architect, 13, John William-street, Huddersfield.

MARCH 15. — **Salop.**—COTTAGES, ETC.—For erection of two new cottages, two sets of new farm buildings; alterations, additions, and repairs to one existing homestead, at Acton Round. Plans, specifications, and forms of tender at the office of the County Land Agent, Mr. Wm. T. Hall, College-hill, Shrewsbury. Deposit of 1*l.*

MARCH 16. — **Barnstaple.**—ALTERATIONS.—For alterations at the Ashleigh-road elementary schools. Particulars from Mr. E. Y. Saunders, P.A.S.I., Borough Surveyor, The Strand, Barnstaple.

MARCH 16. — **Nevern.** — REBUILDING.—For rebuilding Glasdir bach, Nevern, Pembroke. Plans and specifications with Mr. L. Lewis, Lic.R.I.B.A., architect and surveyor, Cardigan.

MARCH 16.—**Stroud.**—WALLS, ETC.—Erection of boundary and retaining walls and other work on land adjoining Castle-street Council School. Drawings and specification with Mr. R. S. Phillips, architect, Shire Hall, Gloucester. Deposit of 1*l.* 1s.

MARCH 18.—**Chertsey.**—HOUSE.—Erection of a house for nurses on a site in the grounds of the Workhouse at Ottershaw. Drawings at the Clerk's Office, 80, Guildford-street, Chertsey. Forms of tender, specification, and quantities on deposit of 1*l.*

MARCH 18.—**Cork.**—HOUSES.—For erection of a terrace of seven houses on the Western-road. Plans and specifications with Messrs. W. H. Hill & Son, architects, 28, South-mall, Cork.

* MARCH 18. — **Cowes.** — DRILL HALL.—The County of Southampton Territorial Force Association invite tenders for erection of a drill hall. See advertisement in this issue for further particulars.

MARCH 18.—**Dungannon.**—OFFICE.—The Great Northern Railway Company (Ireland) invite tenders for the construction of a goods office at Dungannon Station. The drawing and specification at the Engineer's Offices at Dublin and Belfast, and forms of tender from Mr. T. Morrison, Secretary, Secretary's Office, Amiens-street Terminus, Dublin. Deposit of 1*l.* 1s

MARCH 18.—**Kettering.**—HALL.—Erection of a corn market hall in Cattle Market. Plans, specification, quantities, etc., from the Council's Surveyor, Market-place, Kettering, on deposit of 1*l.* 1s.

* MARCH 18. — **Lewes.** — SCHOOL. — The East Sussex Education Committee invite tenders for new secondary school for girls. See advertisement in this issue for further particulars.

MARCH 19.—**Rotherham.**—TANK.—For erection of an elevated water tank in connexion with the Boston service reservoir. Specification and plans from the Borough Engineer, Town Hall, Rotherham.

MARCH 20. — **Hastings.** — ALTERATIONS.—For alterations at the Hastings Workhouse Infirmary. Drawings and specification with Messrs. Jeffery & Son, 18, Havelock-road, Hastings

MARCH 20. — **Rotherham.** — WALL, ETC.—Erection of a ferro-concrete retaining wall alongside the River Don at Millgate, from Jail Bridge to the Corporation slaughterhouses, and for excavating and removing the sand bank from the river bed. Drawings seen, and specification, forms of tender, quantities, and particulars from Mr. E. B. Martin, A.M.Inst.C.E., Borough Engineer, Town Hall, Rotherham. Deposit of 1*l.* 1s.

MARCH 21. — **Perryhill.**—INSTITUTE.—Erection of an institute at Dean Bank. Plans seen, and quantities from Mr. John H. Nicholls, architect, 18, Fawcett-street, Sunderland

* MARCH 21.—**London, E.**—EXTENSIONS.—The Mile End Old Town Guardians invite tenders for extension to boiler-house, etc., at Workhouse, Bancroft-road, Mile End, E. See advertisement in this issue for further particulars.

MARCH 25. — **Bristol.** — HOUSE.—For construction of a dockmaster's house, Portishead Dock. Specification, etc., and drawings, on deposit of 3*l.*, from Mr. W. W. Squire, Engineer, Engineer's Office, Cumberland-road, Bristol.

MARCH 26. — **Nuneaton.**—HALL, ETC.—Erection of a dining-hall and kitchen at the Workhouse. Mr. H. Quick, architect, Market-place, Nuneaton. Deposit of 1*l.* 1s.

MARCH 26. — **Oldham.**—EXTENSION.—For erection of an extension of the existing Town Hall and Municipal Buildings. Plans seen, and quantities and forms of tender from the archi-

BUILDING—*continued.*

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

tects, Messrs. Taylor & Simister, 29, Queen-street, Oldham. Deposit of 1*l.* 1s.

* MARCH 26. — **Sheffield.**—PURIFYING HOUSE.—The Directors of Sheffield United Gas Company invite tenders for erection of a brick and stone purifying house. See advertisement in this issue for further particulars.

* MARCH 26.—**Walthamstow.**—ADDITIONS, ETC., TO A SCHOOL.—The Walthamstow Education Committee invite tenders for alterations and additions to Marsh-street Boys' School. See advertisement in this issue for further particulars.

* MARCH 27. — **Chelmsford.** — THIRTY-EIGHT DWELLINGS.—The Chelmsford T.C. invite tenders for erection of thirty-eight working-class dwellings in five blocks See advertisement in this issue for further particulars.

APRIL 1.—**Birmingham.**—BOILER-HOUSE, ETC.—For erection of boiler-house, etc., at the electric generating station, Summer-lane. Quantities from the quantity surveyors, Messrs Ewen Harper & Brother, Ruskin-chambers, Corporation-street, Birmingham. Deposit of 2*l.* 2s.

* APRIL 1. — **S. Farnborough.**—OFFICES.—The Secretary of State for War invites tenders for erection of offices (steel framing, brickwork, and rough cast) at the Army Aircraft Factory, South Farnborough. See advertisement in this issue for further particulars.

* APRIL 1.—**Tidworth.**—OFFICERS' QUARTERS.—The Secretary of State for War invites tenders for erection of eight officers' quarters in one block at Tidworth, Hants. See advertisement in this issue for further particulars.

NO DATE. — **Lowestoft.**—SCHOOL.—Erection of the Beach School, near Christ Church. Deposit of 2*l.* 2s. to Mr. R. Beattie Nicholson, Town Clerk, Town Hall, Lowestoft.

NO DATE.—**Menston.** HOUSES.—Erection of a pair of houses in Clarence-drive. Messrs. Walker & Collinson, architects, Exchange-buildings, Bradford.

NO DATE. — **York.** — HOME. — Erection of children's home, in the grounds of the Union Workhouse, Haxby-road, York. Drawings and specifications by Mr. J. H. Morton, F.R.I.B.A., North-Eastern Bank-chambers, South Shields, and 57, Westgate-road, Newcastle-on-Tyne. Quantities and form of tender on deposit of 2*l.* 2s.

ENGINEERING, IRON, AND STEEL.

MARCH 8.—**London.**—INSTALLATION.—For electrical installation at the Victoria-embankment Gardens conveniences, for the London C.C. Drawings and specification, form of tender, etc., with the Chief Engineer of the Council, Mr. M. Fitzmaurice, C.M.G., County Hall, Springgadrens, S.W. Deposit of 10s.

MARCH 9. — **Downpatrick.**—WALLS, ETC.—For rebuilding and repairing sea walls on the No. 263 Quintin Bay and No. 264 Slanes Roads, at Millin Bay and Cloughey Corner. Specifications at the County Surveyor's Office, Downpatrick.

MARCH 13. — **Manchester.**—CONVERTERS, ETC.—Erection of motor converters or rotary converters and static transformers. Specifications and forms of tender from Mr. F. E. Hughes, Secretary, Electricity Department, Town Hall, Manchester. Deposit of 2*l.* 2s. Particulars and information from Mr. S. L. Pearce, Chief Electrical Engineer, Dickinson-street, Manchester.

MARCH 19. — **Belfast.** — BRIDGE.—The Great Northern Railway Company (Ireland) invite tenders for the construction of a bridge, with brick abutments and steel superstructure, under main lines, near Belfast. Drawings at the Engineer's Offices at Dublin and Belfast, and drawings, form of tender, specification, and quantities from Mr. T. Morrison, Secretary, Secretary's Office, Amiens-street Terminus, Dublin. Deposit of 2*l.* 2s.

* MARCH 19.—**Isleworth.**—PIPE SUBWAYS.—The Brentford Guardians invite tenders for extension of existing pipe subways. See advertisement in this issue for further particulars.

FURNITURE, PAINTING, MATERIALS, etc.

MARCH 11.—**Liskeard.**—PAINTING, ETC.—For redecoration of the Town Hall and approaches, and sundry repairs; for sundry repairs and painting and papering house in Higher Lux-street. Specifications seen, and particulars from the Borough Surveyor.

MARCH 13.—**Ashton-in-Makerfield.**—PAINTING.—For painting and decorating internally the several blocks of buildings at Isolation Hospital, Bryn-road. Specification and conditions from the Surveyor, Council Offices, Ashton-in-Makerfield.

MARCH 13. — **Twickenham.** — PAINTING, ETC.—For cleaning, distempering, and painting the Free Public Library, Garfield-road. Particulars and form of tender from Mr. Fred W. Pearce, F.S.I., Surveyor to the Council, Town Hall, Twickenham.

MARCH 15.—**Merthyr Tydfil.**—PAINTING.—For colouring and painting interior of the intermediate school. Particulars from the Deputy-Surveyor, Town Hall.

* MARCH 18. — **Kensington.** — CARTAGE.—The Kensington B.C. invites tenders for removal of clinker refuse and also for purchase of screened clinker refuse, etc. See advertisement in this issue for further particulars.

MARCH 20.—**Oxford.**—PAINTING.—For painting work at the Corporation cemeteries. Specification from the City Engineer, Town Hall, Oxford, on deposit of 10s.

MARCH 25.—**Heywood.**—PAINTING.—For painting the Public Baths, Fox-street. Specification and form of tender from Mr. Jas. B. Nuttall, Borough Surveyor, on deposit of 10s.

APRIL 2. — **London.**—PAINTING.—For painting, etc., a portion of the interior of schools, High-road, Leytonstone. Forms of tender and specification, on deposit of 1*l.* 1s., from Mr. D. Thomas, Clerk to the Board, Bishops-road, Victoria Park, N.E.

NO DATE. — **Walsall.**—PAINTING.—For internal and external painting, etc., at the Walsall and District Hospital. Specification and particulars from Messrs. Bailey & McConnal, architects, Kingscourt, Walsall. Deposit of 1*l.* 1s.

ROADS, SANITARY AND WATER WORKS.

* MARCH 13.—**Holborn.**—PAVING WORKS.—The Holborn B.C. invite tenders for carrying out paving works in the borough. See advertisement in this issue for further particulars

MARCH 13. — **Twickenham.** — STREETS.—For paving, kerbing, channelling, and making good streets. Plans and specifications seen, and quantities and forms of tender from Mr. Fred W. Pearce, F.S.I., Surveyor to the Council, Town Hall, Twickenham. Deposit of 1*l.* 1s.

MARCH 18. — **Easington.** — PAVING, ETC.—For the paving, etc., of the private street known as Back Woods-terrace, Murton Colliery. General conditions and specification from Mr. Gilbert Waterhouse, Surveyor, Easington, Castle Eden. Deposit of 2*l.*

MARCH 20. — **Wycombe.** — SEWAGE.—For construction of detritus tanks, percolating filters, humus tanks, sand filters, storm-water tanks, and other appurtenant works at the Sewage Farm, Wendover. Drawings and specification seen, and quantities and form of tender on deposit of 3*l.* 3s. to Mr B. L. Reynolds, Clerk to the Council, 12, Easton-street, High Wycombe.

MARCH 21. — **Naburn.** — SEWERAGE.—For construction of works of sewage disposal at Naburn, near York. Plans, specification, quantities, etc., on deposit of 3*l.*, from Mr. F. W. Spurr, City Engineer, Guildhall, York.

MARCH 21.—**Wenlock.**—SEWAGE.—For laying and jointing 12-in. and 9-in. stoneware pipe sewers; also construction of liquefying tanks, bacteria beds, humus tank sludge beds, and other works. Drawings and specification seen, and quantities and form of tender from the engineers, Messrs Willcox & Raikes, 63, Temple-row, Birmingham, on deposit of 3*l.* 3s

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
'BUILDERS' AND CONTRACTORS' PLANT, ETC.—On the Premises	J. T. Skelding	Mar. 12
'HORTICULTURAL BUILDERS' STOCK-IN-TRADE—On the Premises	Relph & Sons	Mar. 14
'STOCK OF PAP RHANGINGS MERCHANT, 13, HIGH HOLBORN, W.C.—On the Prems.	H. W. Smith	Mar. 14
'FREEHOLD BRICKFIELD—At King's Arms Hotel, Christchurch	H. A. Wooff	Mar. 18
'FREEHOLD MANUFACTURING LAND—At the Mart	Green & Son	Mar. 21
'FREEHOLD BUILDING LAND—At the Mart	Eastman Bros.	Mar. 22
'HOUSE AND SHOP, ST. PANCRAS—At the Mart	Rutley, Son, & Vine	April 2
'HOUSES, SHOPS, ETC.—At the Mart	Rutley, Son, & Vine	April 2

PATENTS.

APPLICATIONS PUBLISHED.*

3,165 of 1911.—John Ware: Elevator or hoist for rise and fall electric light fittings and the like.

3,412 of 1911.—Herbert Read: Device for preventing damage to sun-blinds in windy weather.

3,864 of 1911.—Ernest Carl Hemmer and Gustav Pagenstecher: Paints and the like.

4,616 of 1911.—Frank Mintoft: Device for cleaning floors, windows, and other surfaces.

4,963 of 1911.—William Stewart Mason and Edward Jarvis Mason: Window-holders for sliding sashes.

6,749 of 1911.—Gordon Sharpe: Dust pans or the like.

6,881 of 1911.—Ernest Hitchen: Apparatus for applying the smoke test to drains, soil-pipes, and sanitary fittings.

7,836 of 1911.—Richard Joskolla: Folding partition walls.

8,909 of 1911.—Wilhelm Graaff: Method and device for extinguishing fires.

9,342 of 1911.—James Holt: Syphon-flushing cisterns.

9,822 of 1911.—William Ernest Cato Liebert: Fireproof doors and the like.

10,035 of 1911.—Jonas Lister Rodger: Bottom tile for sewage-tanks and the like.

10,662 of 1911.—George James Webb: Devices for cleaning or removing obstructions in pipes, tubes, and the like.

11,070 of 1911.—James Hill & Co., Ltd., and Harold Tomkins: Opening and closing apparatus for fanlights, skylights, and the like.

11,395 of 1911.—William Henry Partridge: Fastenings for tightly-fitting doors and the like.

12,296 of 1911.—Angelo Vacani Dismore: Roller blinds.

14,399 of 1911.—Maurice Edward Denny and Alexander Porterfield: Weather-tight sliding-windows.

14,915 of 1911.—Harry August Stickman: Reinforcement for concrete and the like.

22,557 of 1911.—John William Ewart: Ventilating-shaft tops.

23,988 of 1911.—Jack Albert James Cadby: Sash frames and sashes and appliances relating to sashes and sash-frames.

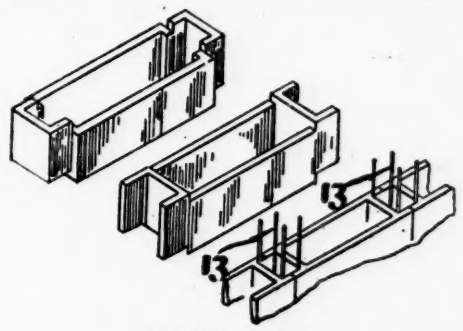
24,489 of 1911.—Wilhelm Lehmuth: Devices for automatically unbolting doors at predetermined times.

* All these applications are in the stage in which opposition to the grant of Patents upon them can be made.

SELECTED PATENTS.

22,795 of 1910.—Harold Merrylees and Merrylees & Co., Ltd.: Hollow building-blocks.

This relates to interlocking hollow blocks for floors or walls, which are shaped as shown, and are made from sawdust, magnesia, and a solution of magnesium chloride. An intimate mixture of 30 per cent. of sawdust and 70 per cent. of magnesia is added to the magnesium chloride solution, until the resulting mixture is plastic. A hollow wall with reinforcing-rods



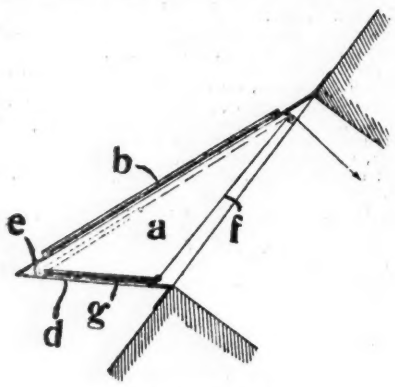
22,795 of 1910.

13 may be formed from such blocks, the blocks being formed with the whole of the upper and lower edges respectively in line, instead of with offset portions.

22,879 of 1910.—Friedrich Hahn: Windows.

This relates to windows through which, when open, rain or snow cannot enter, and which can be fitted in walls or roofs at any inclination, and consists in the provision of a wedge-shaped frame *a*, the lower end *d* of which is

inclined or horizontal and is fitted with an inwardly-opening window *g*; this is pivoted

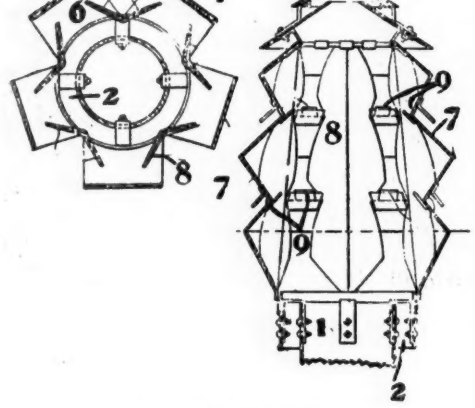


22,879 of 1910.

at *e* to the frame *a*, is opened by a cord *f*, and closes by its own weight. The side *b* of the frame *a* is glazed.

23,698 of 1910.—John Law Garsed: Chimney and ventilating shaft tops.

This relates to the top of a shaft 1, which is surrounded by a ring, thus forming an annular passage 2. Secured to the ring are two sets of plates 7 and 8, connected together at the top, the whole thus forming a somewhat tapering structure. The plates are of shallow V-section, and are so spaced as to



23,698 of 1910.

leave vertical slots 6, which are shielded by the plates 7. The plates 7 are of zigzag vertical section, and are joined at their inner bends to the plates 8, thus dividing the vertical slots 6 into series of vertical apertures. Shielded apertures 9 are provided in the downwardly facing limbs of the plates 7. One or more convex covers complete the top.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

February 22.—By WINTERTON & SONS.

Kingsbury, Warwick.—Grange Farm, 45 a. 1 r. 7 p., f.	£2,520

February 23.—By EARL & LAWRENCE.

Wellingore, Lincs.—Freehold farm, 159 a. 1 r. 33 p.	5,310

February 26.—By VERYARD & YATES.

Charlton.—Nadine-st., f.g. rents 11*l.*, reversion in 85 yrs.	220
Lewisham.—Albacore-cres., f.g.r. 6*l.*, reversion in 88 yrs.	118
New Cross.—59, Amersham-rd., u t. 20 yrs., g.r. 4*l.*, e.r. 36*l.*	128

By MASON, SONS, & KELK.

Hatcliffe, Lincs.—Hatcliffe Farm, 405 a. 1 r. 12 p., f.	9,000
Grainthorpe, Lincs.—Pasture land, 46 a. 1 r. 6 p., f.	2,825

February 27.—By DRIVER, JONAS, & Co.

Oxford-st.—95, Wigmore-st. (s.), f., y.r. 315*l.*	5,100
Greenwich.—10 to 22 (even), Trafalgar-rd. (s.), f., w.r. 105*l.*	410
Westminster.—19 and 20, Medway-st., f., w.r. 106*l.* 12s.	625

By C. GERRETT & Co.

South Norwood.—12, 14, and 16, St. John's-rd. and builder's yard, f., w.r. 90*l.* 16s.	690
Suffolk-rd., plot of land, f.	100
130 and 132, Portland-rd. (s.), f., y.r. 55*l.*	685
Portland-rd., f.g.r. 8*l.* 8s., reversion in 68 yrs.	195
Holland-rd., plot of land, f.	75

By HAMPTON & SONS.

Kensington.—Aubrey-rd., f.g. rents 30*l.*, reversion in 29 yrs.	1,380

By PETTY & SON.

Leytonstone.—184, Hainault-rd., u.t. 65 yrs., g.r. 6*l.*, y.r. 28*l.*	£155

By FREDERICK WARMAN.

Harringay.—96, 98, and 100, Seymour-rd., u.t. 83 yrs., g.r. 21*l.*, y.r. 96*l.*	750
Highbury.—27, Aubert Park, u.t. 48½ yrs., g.r. 10*l.*, y.r. 54*l.*	350
Tottenham.—520, West Green-rd., u.t. 20 yrs., g.r. 11*l.*, p.	300
Barnsbury.—32, Dorinda-st., f., p.	150

By RUTLEY, SON, & VINE.

Camden Town.—32, Rochester-rd., u.t. 31 yrs., g.r. 5*l.*, y.r. 40*l.*	325
Holloway.—7, Crayford-rd., u.t. 40 yrs., g.r. 6*l.*, y.r. 38*l.*	270

By J. W. FLORANCE, FOSTER, & BARBER.

Ladywood, Warwick. — Sherborne-st., Rose b.h., u.t. 33 yrs., g.r. 6*l.* 2s. 6d., y.r 45*l.*	850
Lozells, Warwick. — Wheeler-st., Belle Vue Tavern, f., y.r. 150*l.*	2,750
Balsall Heath, Worcester. — Dymoke-st., Princess of Wales p.h., f., y.r. 50*l.*	900
Winson Green, Warwick.—Lansdowne-st., Oak Tavern, f., y.r. 50*l.*	925
Smethwick, Staffs.—Windmill-la., Windmill Inn, f.g.r. 3*l.* 15s., reversion in 38 yrs.; also eight houses adjoining, f., y.r. 143*l.*	1,250
Birmingham, Warwick.—Dartmouth-st., building site, f.	3,500

By J. C. PLATT.

Shepherd's Bush.—104 and 106, Becklow-rd., f., w.r. 70*l.* 4s.	540
Hammersmith.—27 and 29, Lochaline-st., u.t. 91 yrs., g.r. 12*l.*, w.r. 88*l.* 8s.	655

February 28.—By DANIEL SMITH, SON, & OAKLEY.

South Lambeth.—Fentiman-rd., etc., c.g. rents 59*l.* 14s., reversion in 8½ to 26¾ yrs.; also 121, Dorset-rd., c., y.r. 25*l.*	25,900

By DYER, SON, & HILTON.

Silvertown.—26 to 50 (even), Kempton-st., u.t. 65 yrs., g.r. 50*l.*, w.r. 270*l.* 8s.	455

By FOSTER & CRANFIELD.

Islington.—Sudeley-st., f.g.r. 5*l.*, reversion in 14 yrs.	170
7, Church-st., f., y.r. 40*l.*	380
King Henry's-walk, f.g. rents 26*l.* 2s., reversion in 10 yrs.	785
Chelsea.—Ovington-st., f.g.r. 6*l.*, reversion in 19 yrs.	225
Hammersmith.—Chapel-st., f.g.r. 17*l.* 10s., reversion in 2 yrs.	770

By HENRY HOLMES & Co.

Soho.—17, Manette-st. (s.), f., y.r. 60*l.*	1,325
Paddington.—13, Star-st., u.t. 9 yrs., g.r. nil., e.r. 55*l.*	130
South Lambeth.—10, 11, 12, and 13, Belmore-st., f, w.r 124*l.* 16s.	550
Bethnal Green.—Cephas-st., plot of land, f.	350

By ROBERT TIDEY & SON.

Hoxton.—36, Pitfield-st. (s.), f., y.r. 70*l.*	800

By ERNEST R. OXBORROW.

Ipswich, Suffolk.—31 and 33, Croft-st, f., w.r. 26*l.*	263
28 and 30, Little Croft-st., f., w.r. 22*l.* 2s.	203
65 to 71 (odd), Woodhouse-st., f., w.r. 42*l.* 5s.	315
2, 4, and 6, Alfred-st., f., w.r. 28*l.* 7s. 8d.	195
26 and 28, Crabbe-st., f., w.r. 36*l.* 8s.	425
11, Rendlesham-rd., f., w.r. 13*l.*	133

By MADDISON, MILES, & MADDISON.

Bradwell, Suffolk.—Poplar Farm, 42 acres, f.	1,280
Yarmouth-rd., two cottages, f.	235
House and 3 a 2 r. 13 p., f.	335
Gorleston, Suffolk.—70, Church-rd., f.	285

February 29.—By JOHN G. DEAN & Co.

Balham.—8 to 13, The Limes, f., g.r. 20*l.* 2s.	1,650
Clapton.—37, Nightingale-rd., u.t. 47 yrs., g r. 10*l.*, e.r. 45*l.*	350

By FRANK JOLLY & JAMES RIEBOLDS.

Tottenham.—370, High-rd (s.), f., y.r. 36*l.*	325

By VENTOM, BULL, & COOPER.

West Norwood.—Thurlow Park-rd., f.g. rents 10*l.*, reversion in 52 yrs.	2?0
Sutton, Surrey.—Elm-villas, f.g. rents 10*l.*, reversion in 54 yrs.	205
Camberwell.—Elfin-rd., f.g.r. 20*l.* 5s., reversion in 51 yrs	370
Croydon.—Wortley-rd., f g. rents 8*l.*, reversion in 54 yrs.	175
Lee.—Baring-rd., etc., f.g. rents 67*l.* 4s., reversion in 48 yrs.	1,280
Notting Hill.—All Saints-rd., f.g.r. 10*l.*, reversion in 49 yrs.	245
Shepherd's Bush.—Melina-rd., f.g.r. 6*l.*, reversion in 40 yrs.	132
Lambeth.—Church-st., f.g.r. 10*l.* 10s., reversion in 9 yrs.	400
Enfield.—Nagg's Head-rd., f.g. rents 110*l.*, reversion in 86 yrs.	1,?00
Sydenham.—Elderton-rd., f.g. rents 74*l.*, reversion in 54 yrs.	1,290
Peckham.—Staveley-rd, f.g. rents 12*l.* 12s., reversion in 32 and 28 yrs.	305
Battersea.—Wayland-rd., f.g. rents 30*l.*, reversion in 54 and 38 yrs.	515
Crouch End.—The Grove, f.g. rents 90*l.*, reversion in 55 and 49 yrs	1,670
Brixton.—1 and 22, Wingmore-rd., f., y., and w.r. 60*l.*; also f.g.r. 4*l.* 10s., reversion in 50 yrs.	550
Twickenham.—Haggard-rd., l.g. rents 37*l.*, u.t. 55 yrs., g.r. nil, with reversion	535
Holloway.—Tufnell Park-rd., l.g.r. 9*l.*, u.t. 52 yrs., g.r. 5s.	135
Finsbury Park.—340, Green-las. and l.g.r. 7*l.* 10s., u.t. 98¼ yrs., g.r. 9*l.*, y.r. 45*l.*	390
Pimlico.—Belgrave-rd., l.g.r. 20*l.*, u.t. 15 yrs., g.r. 1s.	240
Teddington.—27, Stanley-rd., f., w.r. 32*l.*	200
Islington.—6, Kingsbury-rd., f., w.r. 40*l.*	250
Campbell-rd., f.g. rents 12*l.* 12s., reversion in 55 yrs.	250
Chiswick.—Wellesley-rd., f.g.r. 5*l.* 10s., reversion in 54 yrs.	£135
Notting Hill.—Acklam-rd., f.g. rents 24*l.*, reversion in 54 yrs.	480
Ramsgate.—Picton-rd., f.g. rents 8*l.* 10s., reversion in 67 and 56 yrs.	170

March 1.—By C. RAWLEY CROSS & Co.

Notting Hill.—11, Barandon-st., u.t. 53 yrs., g.r. 8*l.*, w.r. 39*l.*	120

By ALEX PHILLIPS.

Brondesbury.—12, 14, 16, 18, 22, 25, 27, 29, 33, and 77, Torbay-rd., u.t. 71½ yrs., g.r. 50*l.*, y.r. 368*l.*	3,035

Contractions used in these lists.—**F.g.r.** for freehold ground-rent; **l.g.r.** for leasehold ground-rent; **i.g.r.** for improved ground-rent; **g.r.** for ground-rent; **r.** for rent; **f.** for freehold; **c.** for copyhold; **l.** for leasehold; **p.** for possession; **e.r.** for estimated rental; **w.r.** for weekly rental; **q.r.** for quarterly rental; **y.r.** for yearly rental; **u.t.** for unexpired term; **p.a.** for per annum; **yrs.** for years; **la.** for lane; **st.** for street; **rd.** for road; **sq.** for square; **pl.** for place; **ter.** for terrace; **cres.** for crescent; **av.** for avenue; **gdns.** for gardens; **yd.** for yard; **gr.** for grove; **b.h.** for beerhouse; **p.h.** for public-house; **o.** for offices; **s.** for shops; **ct.** for court.

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to "THE PUBLISHER," and *not* to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

Per 1000 Alongside, in River.	£ s. d.
Best Stocks	1 14 0
Picked Stocks for Facings	2 7 0

Per 1000, Delivered at Railway Depôt.

	£ s. d.		£ s. d.
Flettons	1 12 0	Best Blue Pressed Staffordshire	3 15 0
Best Fareham Red	3 12 0	Do. Bullnose	4 0 0
Best Red Pressed Ruabon Facing	5 0 0	Best Stourbridge Fire Bricks	4 0 0

GLAZED BRICKS—

Best White, Ivory, and Salt Glzd.Str'tch'rs	11 7 6	Double Headers	13 17 6
		One Side and two Ends	17 17 6
Headers	10 17 6	Two Sides and one End	18 17 6
Quoins, Bullnose, and 4½ in. Flats	14 17 6	Splays & Squints	16 7 6
D'ble Stretchers	16 17 6		

Second Quality £1 10s. per 1000 less than best.

	s. d.
Thames and Pit Sand	6 9 per yard, delivered.
Thames Ballast	5 6 " "
Best Portland Cement	31 0 per ton, "
Best Ground Blue Lias Lime	19 0 " "

NOTE—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 13s. 0d. per yard delivered.
Stourbridge Fireclay in sacks 27s. 0d. per ton at rly dpt.

STONE.

Per Ft. Cube.

	s. d.
BATH STONE — delivered on road waggons, Paddington Depôt	1 6½
Do. do. delivered on road waggons, Nine Elms Depôt	1 8½

PORTLAND STONE (20 ft. average)—

Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 3
White Basebed, delivered on road waggons Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 4½

Per Ft. Cube, delivered at Railway Depôt.

	s. d.		s. d.
Ancaster in blocks	1 10	Closeburn Red Freestone	2 0
Beer in blocks	1 6	Red Mansfield Freestone	2 4
Greenshill in blocks	1 10	Talacre & Gwespyr Stone	2 8
Darley Dale in blocks	2 4		
Red Corsehill in blocks	2 3		

STONE (*Continued*).

YORK STONE—*Robin Hood Quality.* Per Ft. Cube, Delivered at Railway Depôt.	s.	d.
Scappled random blocks	2	10
Per Ft. Super., Delivered at Railway Depôt.		
6 in. sawn two sides landings to sizes (under 40 t. super.)	2	3
6 in. rubbed two sides ditto, ditto	2	6
3 in. sawn two sides slabs (random sizes)	0	11½
2 in. to 2½ in. sawn one side slabs (random sizes)	0	7
1½ in. to 2 in. ditto, ditto	0	6
HARD YORK—		
Per Ft. Cube, Delivered at Railway Depôt.		
Scappled random blocks	3	0
Per Ft. Super., Delivered at Railway Depôt.		
n. sawn two sides landing to sizes (under 40 ft. super.)	2	8
6 in. rubbed two sides ditto	3	0
3 in. sawn two sides slabs (random sizes)	1	2
2 in. self-faced random flags	0	5

SLATES.

Per 1000 of 1200 at Railway Depôt.

In. In.	£	s.	d.	In. In.	£	s.	d.
20×10 best blue Bangor	13	2	6	20×10 best Eur'ka unfading green	15	17	6
20×12 ditto	13	17	6	20×12 ditto	18	7	6
20×10 1st quality ditto	13	0	0	18×10 ditto	13	5	0
20×12 ditto	13	15	0	16×8 ditto	10	5	0
16×8 ditto	7	5	0	20×10 permanent green	11	12	6
22×10 best blue Portmadoc	12	12	6	18×10 ditto	9	12	6
16×8 ditto	6	12	6	16×8 ditto	6	12	6

TILES.

At Railway Depôt.

	s.	d.		s.	d.
Best plain red roofing (per 1000)	42	0	Best "Hartshill" brand, plain sandfaced (per 1000)	50	0
Hip and Valley (per doz.)	3	7	Do. pressed (per 1000)	47	6
Best Broseley (per 1000)	50	0	Do. Ornamental (per 1000)	50	0
Do. Ornamental (per 1000)	52	6	Hip (per doz.)	4	0
Hip and Valley (per doz.)	4	0	Valley (per doz.)	3	6
Best Ruabon red, brown, or brindled (Edw'ds) (per 1000)	57	6	Staffords. (Hanley) Reds or Brindled (per 1000)	42	6
Do. Ornamental (per 1000)	60	0	Hand-made sandfaced (per 1000)	45	0
Hip (per doz.)	4	0	Hip (per doz.)	4	0
Valley (per doz.)	3	0	Valley (per doz.)	3	6

WOOD.

BUILDING WOOD.	At per standard. £	s.	d.		£	s.	d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.	14	0	0	...	15	10	0
Deals: best 3 by 9	13	10	0	...	14	10	0
Battens: best 2½ in. by 7 in. and 8in., and 3 in. by 7 in. and 8 in.	11	10	0	...	12	10	0
Battens: best 2½ by 6 and 3 by 6	0	10	0		less than 7 in. and 8 in.		
Deals: seconds	1	0	0	less thn best.			
Battens: seconds	0	10	0	"		"	
2 in. by in. and 2 in. by 6 in.	9	10	0	...	10	10	0
2 in. by 4½ in. and 2 in. by 5 in.	9	0	0	...	10	0	0
Foreign Sawn Boards—							
1 in. and 1¼ in. by 7 in.	0	10	0		more than battens.		
¼ in.	1	0	0		"		
Fir timber: best middling Danzig or Memel (average specification)	At per load of 50 ft. 5	0	0	...	5	10	0
Seconds	4	10	0	...	5	0	0
Small timber (8 in. to 10 in.)	3	17	6	...	4	0	0
Small timber (6 in. to 8 in.)	3	5	0	...	3	10	0
Swedish balks	2	12	6	...	3	0	0
Pitch-pine timber (30 ft. average)	5	5	0	...	6	0	0
JOINERS' WOOD.	At per standard.						
White Sea: first yellow deals, 3 in. by 11 in.	24	10	0	...	25	10	0
3 in. by 9 in.	22	10	0	...	23	10	0
Battens, 2½ in. and 3 in. by 7 in.	17	0	0	...	18	0	0
Second yellow deals, 3in. by 11in.	19	0	0	...	20	0	0
" " 3 in. by 9 in.	18	0	0	...	19	10	0
Battens, 2½ in. and 3in. by 7 in.	14	0	0	...	15	0	0
Third yellow deals, 3 in. by 11 in. and 9 in.	14	0	0	...	15	0	0
Battens, 2½ in. and 3 in. by 7 in.	11	10	0	...	12	10	0
Petersburg: first yellow deals, 3 in. by 11 in.	21	10	0	...	22	10	0
Do. 3 in. by 9 in.	18	10	0	...	19	10	0
Battens	14	0	0	...	15	0	0
Second yellow deals, 3 in. by 11 in.	16	10	0	...	17	10	0
Do. 3 in. by 9 in.	15	0	0	...	16	0	0
Battens	11	10	0	...	12	10	0
Third yellow deals, 3in. by 11 in.	13	10	0	...	14	10	0
Do. 3 in. by 9 in.	13	0	0	...	14	0	0
Battens	10	10	0	...	11	0	0
White Sea and Petersburg—							
First white deals, 3 in. by 11 in.	15	0	0	...	16	0	0
" " 3 in. by 9 in.	14	0	0	...	14	10	0
Battens	11	10	0	...	12	10	0
Second white deals, 3in. by 11in.	14	0	0	...	15	0	0
" " 3 in. by 9 in.	13	0	0	...	14	0	0
Battens	10	10	0	...	11	0	0
Pitch-pine: deals	19	0	0	...	21	0	0
Under 2 in. thick extra	0	10	0	...	1	0	0
Yellow Pine—First, regular sizes	48	0	0		upwards.		
Oddments	32	0	0		"		
Seconds, regular sizes	33	0	0		"		
Oddments	28	0	0		"		
Kurai Pine—Planks per ft. cube.	0	4	6	...	0	6	0
Danzig and Stettin Oak Logs—							
Large, per ft. cube	0	3	0	...	0	3	9
Small "	0	2	6	...	0	2	6
Wainscot Oak Logs, per ft. cube	0	6	6	...	0	8	0
Dry Wainscot Oak, per ft. sup. as inch	0	0	10	...	0	1	0
¼ in. do. do.	0	0	8½	...		—	
Dry Mahogany—Houndras, Tabasco, per ft. super. as inch..	0	0	10	...	0	1	1
Selected, Figury, per ft. super. as inch	0	1	6	...	0	2	6

WOOD (*Continued*).

JOINERS' WOOD (*Continued*)—	At per standard. £	s.	d.		£	s.	d.
Dry Walnut, American, per ft. super. as inch	0	0	10	...	0	1	0
Teak, per load	18	0	0	...	22	0	0
American Whitewood planks, per ft. cube	0	5	0	...	0	6	0
Prepared Flooring, etc.—	Per square.						
1 in. by 7 in. yellow, planed and shot	0	13	6	...	0	17	0
1 in. by 7 in. yellow, planed and matched	0	14	0	...	0	18	0
1¼ in. by 7 in. yellow, planed and matched	0	16	0	...	1	0	0
1 in. by 7 in. white, planed and shot	0	12	0	...	0	14	6
1 in. by 7 in. white, planed and matched	0	12	6	...	0	15	0
1¼ in. by 7 in. white, planed and matched	0	15	0	...	0	16	6
¾ in. by 7 in. yellow, matched and beaded or V-jointed brds.	0	11	0	...	0	13	6
1 in. by 7 in. " "	0	14	0	...	0	18	6
¾ in. by 7 in. white " "	0	10	0	...	0	11	0
1 in. by 7 in. " "	0	12	9	...	0	15	0

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton. £	s.	d.		£	s.	d.
Rolled Steel Joists, ordinary sections	7	10	0	...	8	0	0
Compound Girders, ordinary sections	9	10	0	...	10	0	0
Steel Compound Stanchions	11	0	0	...	12	0	0
Angles, Tees, and Channels, ordinary sections	9	10	0	...	10	0	0
Flitch Plates	9	10	0	...	10	0	
Cast Iron Columns & Stanchions, including ordinary patterns	7	10	0	...	8	10	0

METALS.

IRON—	Per ton, in London. £	s.	d.		£	s.	d.
Common Bars	9	0	0	...	9	10	0
Staffordshire Crown Bars, good merchant quality	9	5	0	...	9	15	0
Staffordshire "Marked Bars"	11	0	0	...	—		
Mild Steel Bars	9	5	0	...	9	15	0
Hoop Iron, basis price	10	0	0	...	—		
" " Galvanised	17	10	0	...	—		
(*And upwards, according to size and gauge.)							
Sheet Iron Black—							
Ordinary sizes to 20 g.	10	5	0	...	—		
" " 24 g.	11	5	0	...	—		
" " 26 g.	12	15	0	...	—		
Sheet Iron, Galvanised, flat, ordinary quality—							
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	15	10	0	...	—		
Ordinary sizes to 22 g. and 24 g.	16	0	0	...	—		
" " 26 g.	17	0	0	...	—		
Sheet Iron, Galvanised, flat, best quality—							
Ordinary sizes to 20 g.	18	10	0	...	—		
" " 22 g. and 24 g.	19	0	0	...	—		
" " 26 g.	20	10	0	...	—		
Galvanised Corrugated Sheets—							
Ordinary sizes, 6ft. to 8ft. 20 g.	15	0	0	...	—		
" " 22 g. and 24 g.	15	5	0	...	—		
" " 26 g.	16	15	0	...	—		
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	12	10	0	...	—		
Best Soft Steel Sheets, 2 g. & 24 g.	13	10	0	...	—		
" " " 26 g.	15	10	0	...	—		
Cut Nails, 3 in. to 6 in.	11	0	0	...	11	10	0
(Under 3 in., usual trade extras.)							

LEAD, &c.

	£	s.	d.				
LEAD—Sheet, English, 4lb. and up	19	12	6	...	—		
Pipe in coils	20	2	6	...	—		
Soil pipe	23	2	6	...	—		
Compo pipe	23	2	6	...	—		
ZINC—Sheet—	In casks of 10 cwt.						
Vielle Montagne	33	10	0	...	—		
Silesian	33	5	0	...	—		
Zinc, in bundles, 1s. per cwt. extra.							
COPPER—							
Strong Sheet per lb.	0	1	0	...	—		
Thin " "	0	1	1	...	—		
Copper nails "	0	0	10	...	—		
Copper wire "	0	0	10	...	—		
BRASS—							
Strong Sheet "	0	0	11	...	—		
Thin "	0	1	0	...	—		
TIN—English Ingots "	0	1	11	...	—		
SOLDER—Plumbers' "	0	0	8½	...	—		
Tinmen's "	0	0	11	...	—		
Blowpipe "	0	1	2	...	—		

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.*

Per Ft., Delivered.

15 oz. thirds	2½d.	26 oz. fourths	3½d.
" fourths	1½d.	32 oz. thirds	5d.
21 oz. thirds	3d.	" fourths	4½d.
" fourths	2⅝d.	Fluted Sheet, 15 oz.	3½d.
26 oz. thirds	4d.	" 21 oz.	4½d.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.*

Per Ft., Delivered.

⅛ Hartley's	2d.	Figured Rolled, Oxford Rolled, Oceanic, Arctic, Muffled, and Rolled Cathedral, white	3½d.
⅜ "	2½d.		
½ "	2¾d.	Ditto, tinted	5d.

* Not less than three crates.

OILS, &c.

		£	s.	d.
Raw Linseed Oil in pipes	per gallon	0	3	2
" " " in barrels	"	0	3	3
" " " in drums	"	0	3	5
Boiled " " in barrels	"	0	3	5
" " " in drums	"	0	3	8
Turpentine in barrels	"	0	2	10
" in drums	"	0	3	0
Genuine Ground English White Lead, per ton		26	10	0
Red Lead, Dry	"	23	5	0
Best Linseed Oil Putty	per cwt.	0	10	0
Stockholm Tar	per barrel	1	12	0

VARNISHES, &c.

	Per gallon. £	s.	d.
Fine Pale Oak Varnish	0	8	0
Pale Copal Oak	0	10	6
Superfine Pale Elastic Oak	0	12	6
Fine Extra Hard Church Oak	0	10	0
Superfine Hard-drying Oak, for seats of Churches	0	14	6
Fine Elastic Carriage	0	12	0
Superfine Pale Elastic Carriage	0	16	0
Fine Pale Maple	0	10	0
Finest Pale Durable Copal	0	18	0
Extra Pale French Oil	1	1	0
Eggshell Flating Varnish	0	18	0
White Pale Enamel	1	4	0
Extra Pale Paper	0	12	0
Best Japan Gold Size	0	10	6
Best Black Japan	0	16	0
Oak and Mahogany Stain	0	9	0
Brunswick Black	0	8	0
Berlin Black	0	16	0
Knotting	0	10	9
French and Brush Polish	0	10	6

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 6 *p.m. on Wednesday.* [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100*l.* unless in some exceptional cases and for special reasons.]

* Denotes *accepted.* † Denotes *provisionally accepted.*

ARDGLASS.—For erection of a new masonic hall, for Ardglass Masonic Lodge. Messrs. Browne Bros., architects, Ardglass, Ireland:—

R. McDonald, Church-street, Downpatrick ..... £575‡

‡ Exclusive of heating, lighting, and furnishing.

BARROUL.—For erection of a new laundry at the North Lonsdale Hospital. Mr. A. T. Fowler, A.R.I.B.A., architect and surveyor, Barroul:—

T. Slee	£800	8	
H. Britton	785	15	
W. Gradwell & Co., Ltd.	769	0	
J. Neal	760	0	
J. H. Neal & Son, Ltd.	£745	0	
W. Saddler, High-street, Barrow-in-Furness*	737	7	

BELMONT.—For erection of two cottages, for Messrs. H. Lashlie and J. Dawson. Mr. W. T. Jones, F.S.A., F.R.I.B.A., architect, 7A, North Bailey, Durham:—

T. Coates	£824	5	2
D. Elliot	803	0	11
T. Whittingham	775	0	0
Beevers & Clark	747	13	9
C. Gibson	£723	10	0
F. Goodyear	693	15	0
W. Sparrow, Hetton-le-Hole*	638	15	0

BOWLING (Bradford).—For altering and enlarging St. John's Church Sunday-schools, Paley-road. Messrs. T. C. Hope and Geo. Roberts, architects, Bradford. Quantities by the architects:—

Masons: North & Son, Bradford*
Joiner: C. Chambers, Bradford*
Plumber: H. Marks, Bradford*
Plasterer: J. Whealer, Bradford*
Slater: T. Nelson, Bradford*
} £599 5

[Total amount of the highest tenders for these trades, £951 17s. 6d. Forty-five tenders were received.]

BRADFORD.—For erection of St. Chrysostom's Sunday-school and Parochial Institute. Mr. H. E. Priestley, M.S.A., architect, Manningham. Quantities by the architect:—

Excavators, Masons, and Bricklayers: J. & P. Obank, Idle, Bradford	£680 10 0
Carpenter and Joiner: T. Patrick, Clayton	227 10 0
Slater: J. Smithies, Great Horton, Bradford.	72 18 6
Steelwork: H. Barrett & Sons, Thornton-rd., Bradford	80 5 3
Plasterers: J. & W. Bates, Manchester-road, Bradford	85 0 0
Plumber and Glazier: W. Toothill, Otley-road, Bradford	89 5 6
Painters: J. O. Gelder & Son, Totter-lane, Bradford	22 17 0

DUBLIN.—For erection of forty-five two-story cottages on the Cook-street area, for Dublin Corporation. Mr. C. J. MacCarthy, F.R.I.A.I., City Architect. Quantities by Mr. James Mackey, 58, Dame-street, Dublin:—

J. Pemberton	£7,826	18	2
H. J. Monks	7,600	0	0
T. Mackey & Sons	7,400	0	0
H. & J. Martin, Ltd.	7,300	0	0
J. & P. Good, Ltd.	6,850	0	0
J. & M. Clark	£6,721	0	0
Farmer Bros.	6,621	12	11
H. Duncan & Son	6,550	0	0
A. Hall & Co., Ringsend-road, Dublin‡	6,390	0	0

‡ Recommended for acceptance.

GREAT BURSTEAD.—For erection of seven cottages in Church-lane, for the Billericay Rural District Council. Mr. Hugo R. Bird, architect and surveyor, Brentwood:—

		Extra if Built in Red Facings.
W. Mountain	£1,841 10 0	£5 16 0
A. J. Gozzett	1,500 0 0	—
H. Potter & Son	1,450 0 0	—
W. Boardman & Son	1,390 0 0	10 0 0
J. Parren & Son	1,347 10 0	25 0 0
H. Iles	1,325 0 0	—
F. W. Jarvis	1,317 0 0	—
F. W. Burtwell	1,287 0 0	—
W. E. Sharpless	1,266 0 0	14 10 0
W. Dallenger	1,260 10 0	18 10 0
W. Shipton	1,260 0 0	31 10 0
Spalding, Sons, & Co.	1,243 0 0	16 0 0
Rudking & Finch	1,155 0 0	10 0 0
Harris Bros., Billericay‡	1,150 0 0	10 0 0
E. F. Selby	1,148 0 0	14 0 0

‡ Recommended for acceptance.

HUNSTANTON.—For additions and alterations to Convalescent Home, for the General Committee. Messrs. MacAlister & Skipper, architects, Cambridge. Quantities by the architects:—

Redding & Son	£3,133	Rose & Sons	£2,913
I. Cracknell	3,079	Bell & Son	2,899
Rands & Son	3,072	Dye & Allen	2,898
W. Saint	3,064	Shanks & Son, Chatteris*	2,888
Willmott & Son	3,030		
F. Southgate	3,009		

LANCASTER.—For erection of farm colony buildings. Messrs. Woolfall & Eccles, FF.R.I.B.A., Liverpool:—

Excavators, Drainers, Bricklayers, Masons, Carpenters, Joiners, and Ironfounders: Thompson & Morris, Dalton-square, Lancaster*	£3,030 0 0
Slaters and Plasterers: T. Cross & Sons, King-street, Lancaster*	376 12 6
Plumber and Glazier: R. P. Wilson, King-street, Lancaster*	465 15 0
Painters: Eaton & Bulfield, King-street, Lancaster*	102 8 6

LONDON.—For the erection of new premises, High Holborn, for the Pearl Assurance Company, Ltd. Mr. H. Percy Monckton, F.R.I.B.A., F.S.I., architect, 32, Walbrook, E.C.:—

W. Lawrence & Son	£174,471
Higgs & Hill, Ltd.	168,284
Perry & Co. (Bow), Ltd.	166,834
Foster & Dicksee, Ltd.	165,670
Trollope & Sons & Colls & Sons, Ltd.	165,363
J. Mowlem & Co., Ltd.	164,890
Holland & Hannen	164,444
Parkinson & Sons, Ltd.	162,383
J. Carmichael	161,898
Holloway Bros., Ltd.	161,000
Wallis & Sons, Ltd.	159,840
Dove Bros., Ltd.*	158,365

LONDON.—For alterations and repairs to the bandstands in the Clissold and Brockwell Parks, for the London County Council:—

	Brockwell Park.	Clissold Park.
A. Roberts & Co., Ltd.	£285	£285
J. C. Mather	292	272
W. Downs	283	274
F. & G. Foster	277	261
J. Grover & Son	265	253
F. & T. Thorne	238	243
Marchant, Hirst, & Co.	238	223
W. J. Mitchell & Son	220	235
Rowley Bros.	218	224
J. Garrett & Son	200	215
G. Godson & Sons	205	194
F. W. Fletcher	189	199

LONDON.—For the supply of steel pipes and cast-iron special pipes, for the London County Council:—

(i.) Steel Pipes.

	With Welded Flanges.	With Riveted Flanges.
The British Mannesmann Tube Co., Ltd.	£173 18‡	—
J. Spencer, Ltd.	170 0	£145 0
Clayton, Son, & Co., Ltd.	137 10	156 0
Stewarts & Lloyds, Ltd.	125 0‡	157 0‡
T. Piggott & Co., Ltd.	—	98 10

(ii.) Cast-Iron Special Pipes.

Holwell Iron Co., Ltd.	£68 15 0
Stanton Iron Works Co., Ltd.	65 13 3

‡ Less 2½ per cent.

LONDON.—For the electric lighting of the new engine-house at the Abby Mills Pumping Station, for the London County Council:—

Tilley Bros	£848 19 6	Pinching & Walton	£745 2 0
Tredegar & Co.	839 0 0	E. Newbald & Co.	699 0 0
G. E. Taylor & Co.	801 13 6	Foot & Milne, Ltd.*	680 0 0

[The Chief Engineer's estimate, comparable with the tenders, was £600.]

LONDON.—For erection of a warehouse, Bartholomew-close, E.C. Mr. Walter Pamphilon, architect, 21, Finsbury-pavement, E.C.:—

Trollope & Colls	£18,650	Dove Bros.	£17,675
Price	18,642	Bovis & Co	17,397
Harris & Wardrop	18,487	Prestige & Co.	17,257
Cubitt & Co.	17,948	Greenwood & Co.	16,973
Hall & Beddall & Co.	17,724	Grover & Sons	16,972

LYMINGE.—For erection of a new infirmary and nurses' home at the workhouse, for Elham Board of Guardians. Mr. A. Robert Bowles, architect, Folkestone. Quantities by Mr. J. H. Moody, Folkestone:—

Mills & Co.	£7,447 11 0	J. J. Clayson	£4,795 0 0
C. Jenner	5,319 0 0	Denne & Co.	4,794 0 0
O. Marx	5,250 14 6	Castle & Son.	4,778 0 0
J. G. Parsons	5,129 5 0	Barton & Co.	4,694 9 11
Hayward & Paramor	5,059 0 0	R. Webster	4,643 0 0
Scott Bros.	4,979 0 0	W. Shippam	4,618 0 0
Parker & Co.	4,945 0 0	F. W. & J. Clark	4,610 0 0
Lawn & Co.	4,900 0 0	Wallis & Son.	4,594 0 0
J. Gosby	4,831 6 0	S. Vant, Folkestone†	4,255 0 0
G. Browning	4,809 19 10		

ROSEHEARTY.—For erection of new Masonic Hall. Mr. W. S. F. Wilson, architect, Fraserburgh:—

Mason: W. Birnie, Rosehearty	£173 0
Carpenter: A. McKenzie, Rosehearty	128 12
Slater: G. Gerrard, Rosehearty	30 12
Plumbers: R. Tindall & Son, Ltd., Fraserburgh	50 10
Plasterer: A. Wiseman, Fraserburgh	25 10
Painter: A. McKenzie, Rosehearty	10 2

SILKSWORTH.—For erection of a new picture hall, according to amended plans. Mr. J. Newton Fatkin, architect, 1, St. Nicholas-buildings, Newcastle:—

J. Elrick	£1,140 0	J. Clark & Son	£1,000 0
E. Weatherley	1,115 0	J. W. White	999 0
R. C. Brown	1,046 0	J. & T. Parker	990 0
Clerey & Charlton	1,044 0	R. & A. P. Tait, Seaton Delavel, Northumberland*	985 10
W. B. Cooper	1,017 0		
Golding & Ward	1,014 0		
J. Huntley	1,011 0		

STOCKTON.—For erection of new deaf school, handicraft, and cookery centres. Mr. E. G. Fletcher, architect, Stockton-on-Tees:—

R. Aspden	£5,078 1 6	A. J. Cooke	£4,606 6 3
T. Brown	4,759 0 0	W. A. King & Son, Ltd	4,556 10 0
T. Pearson	4,737 0 0	W.M. Doughty	4,547 5 6
S. Coates & Co., Ltd.	4,700 14 5	J. W. Moore, West Hartlepool‡	4,363 0 0
G. E. Gray	4,689 19 0		
W. Weir	4,689 17 2		

‡ Recommended for acceptance.

TOTTENHAM.—For new County school at High-road, Tottenham, for the Middlesex County Council. Mr H. G. Crothall, Architect to the Education Committee:—

Leslie & Co.	£20,508	A. Porter	£18,130
Holliday & Greenwood	19,730	A. Fairhead & Son	18,066
C. Wall, Ltd	19,706	A. Monk	17,850
Higgs & Hill	19,484	G. E. Wallis & Co.	17,774
J. Garrett & Son	19,000	H. Knight & Son	17,250
Brand, Pettit, & Co.	18,850	W. Lacey	17,170
J. Carmichael	18,475	W. Lawrance & Son	16,961
W. J. Dickens	18,258	Mattock Bros.‡	16,577

‡ Recommended for acceptance.

WARRINGTON.—For erection of a bathroom to No. 72, Mersey-street. Mr. T. Longdin, Borough Engineer and Surveyor:—

W. & A. Ashton, Bridge Foot, Warrington*	£35 8

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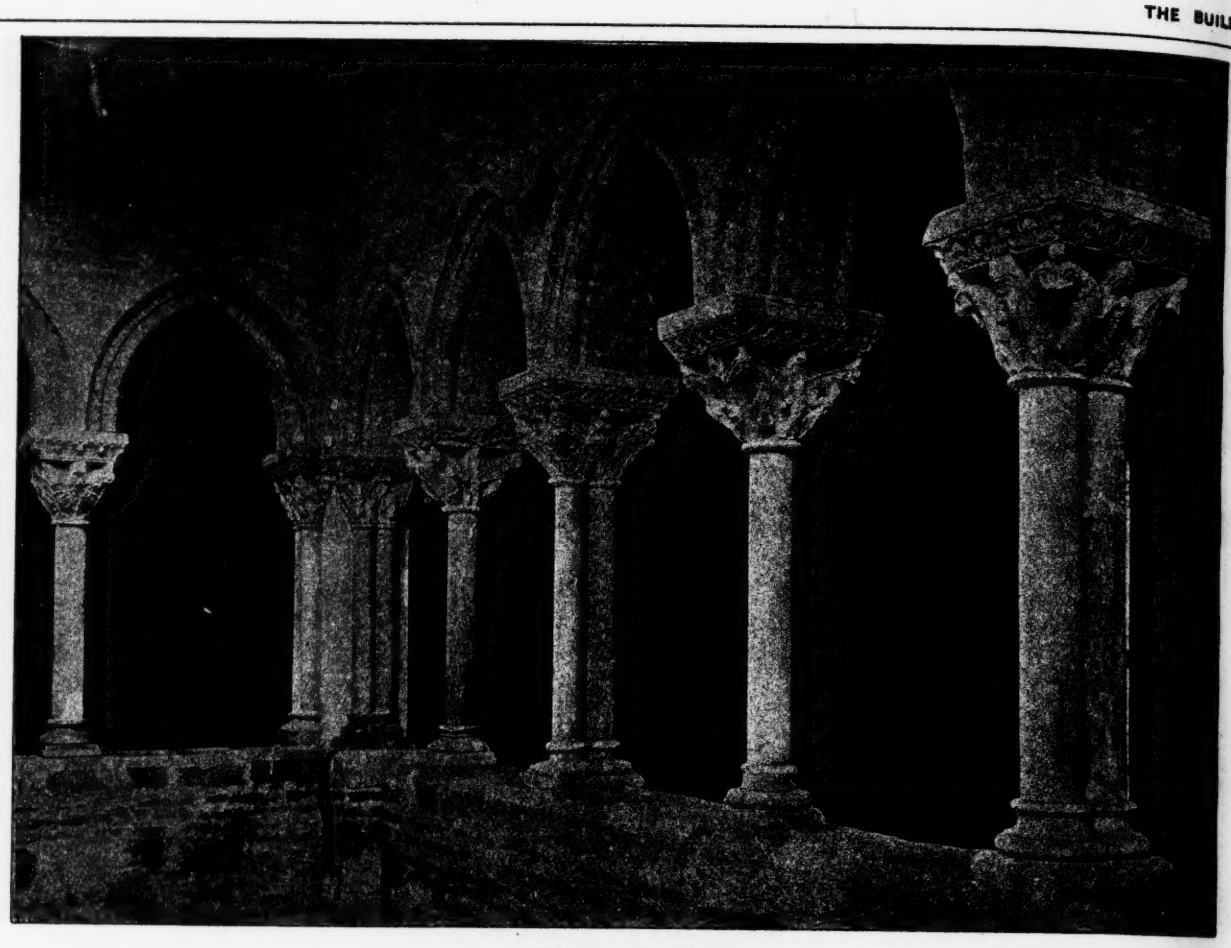

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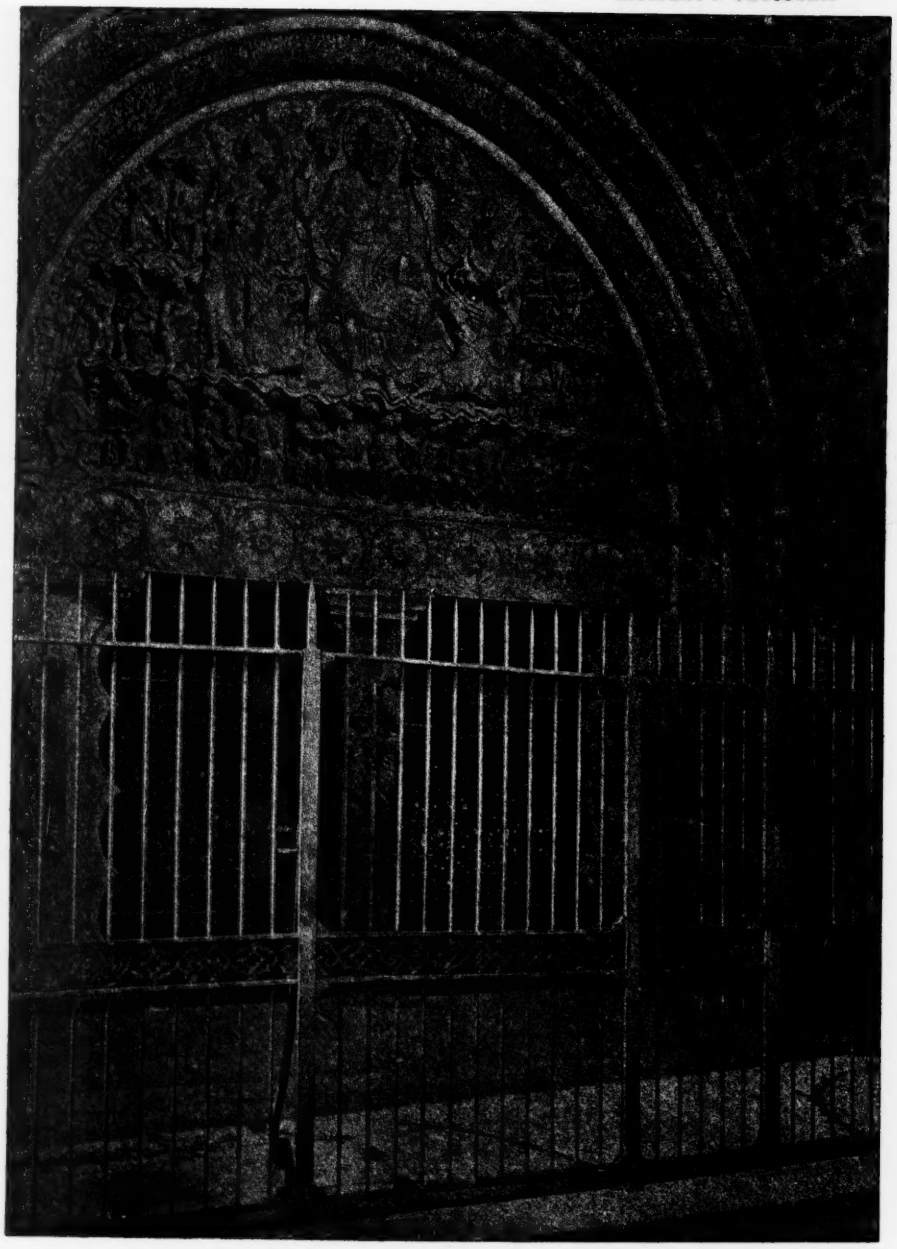

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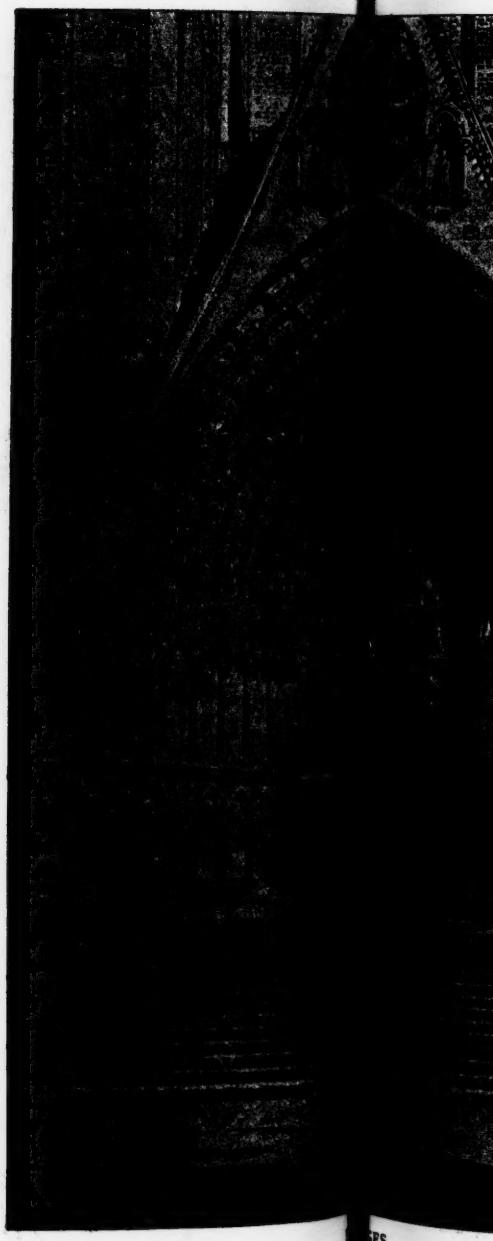

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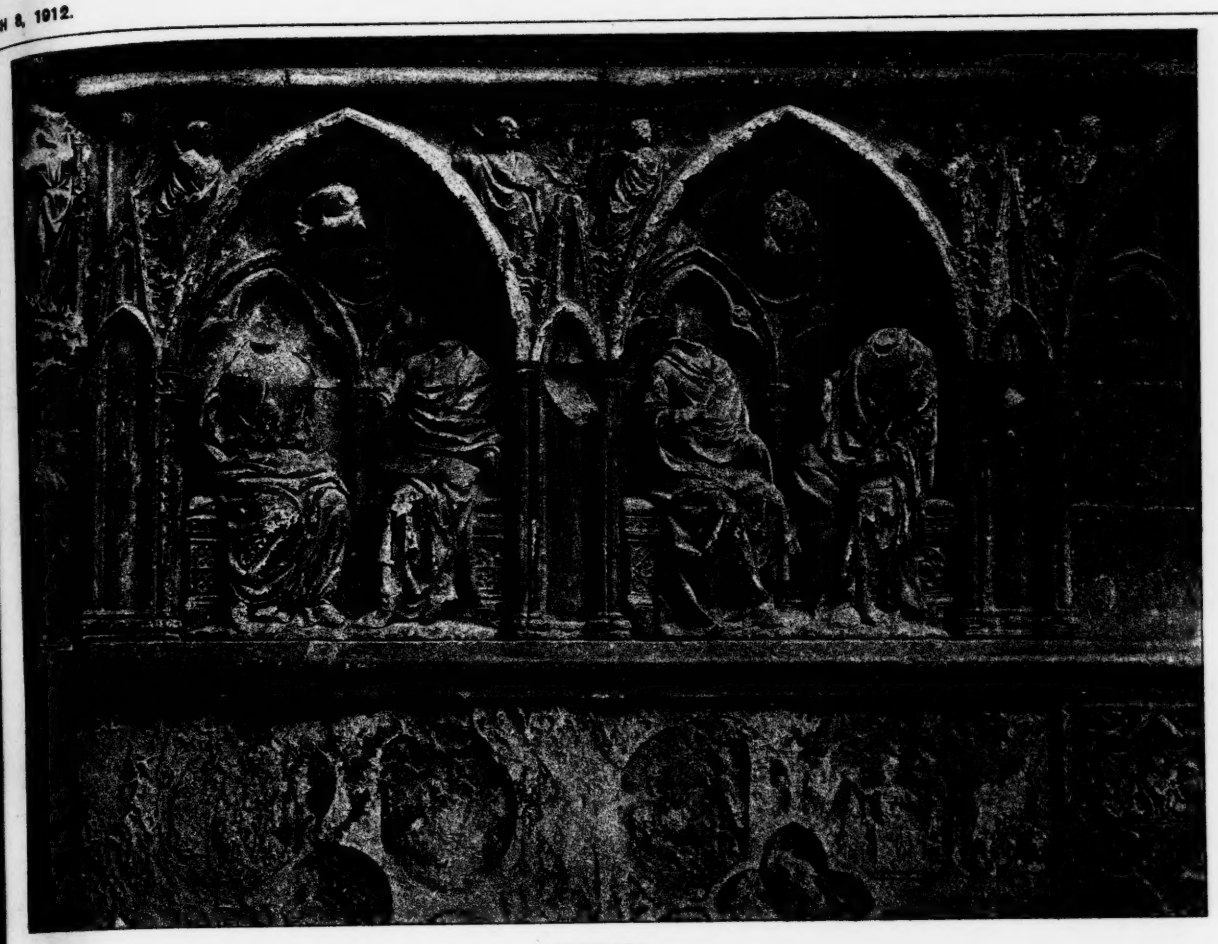

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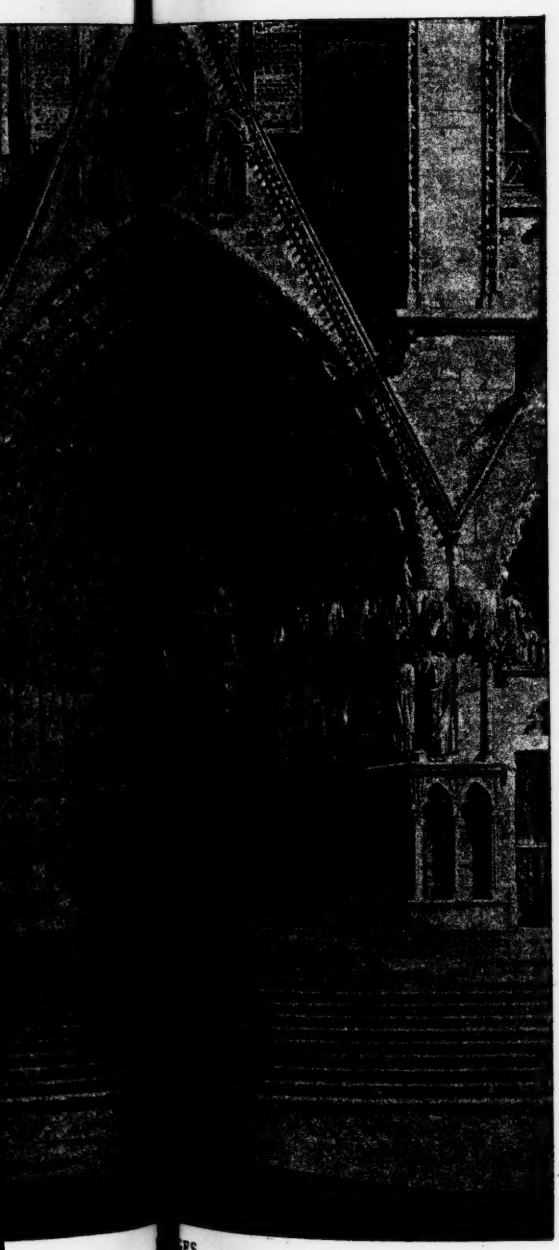

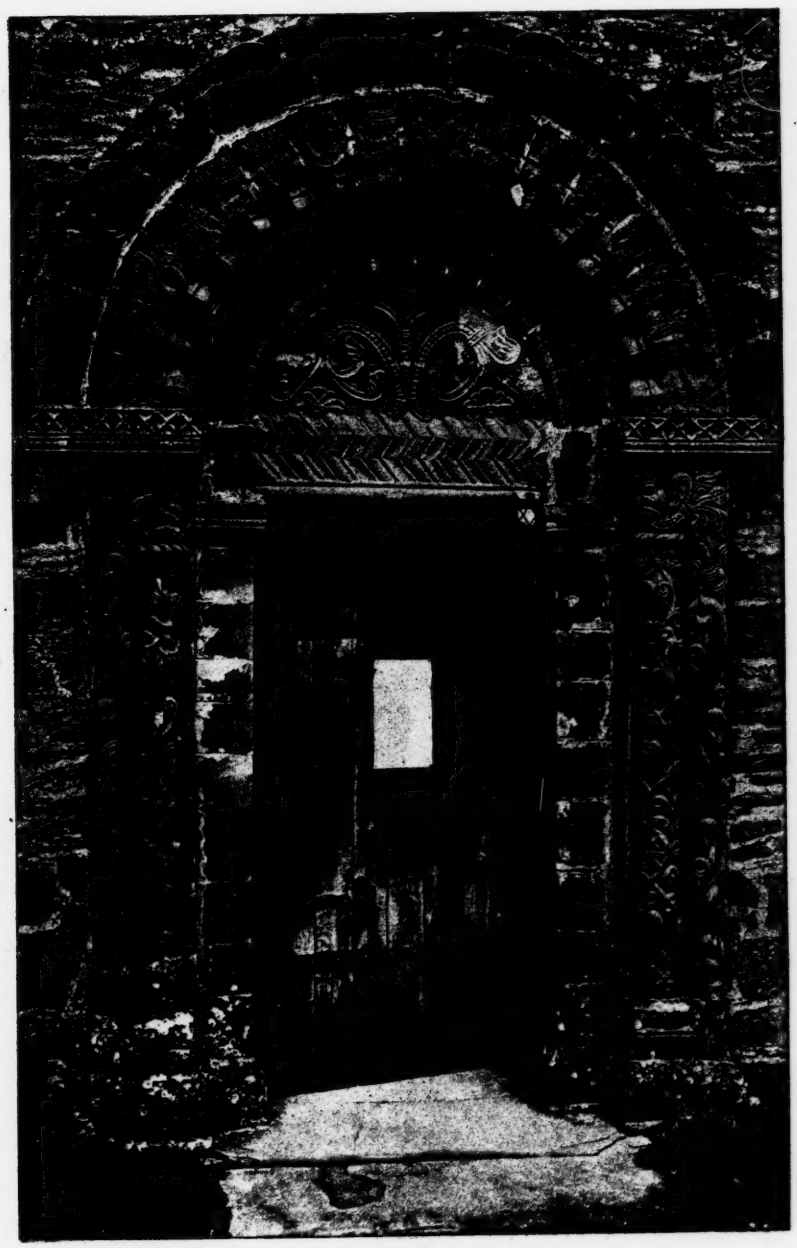

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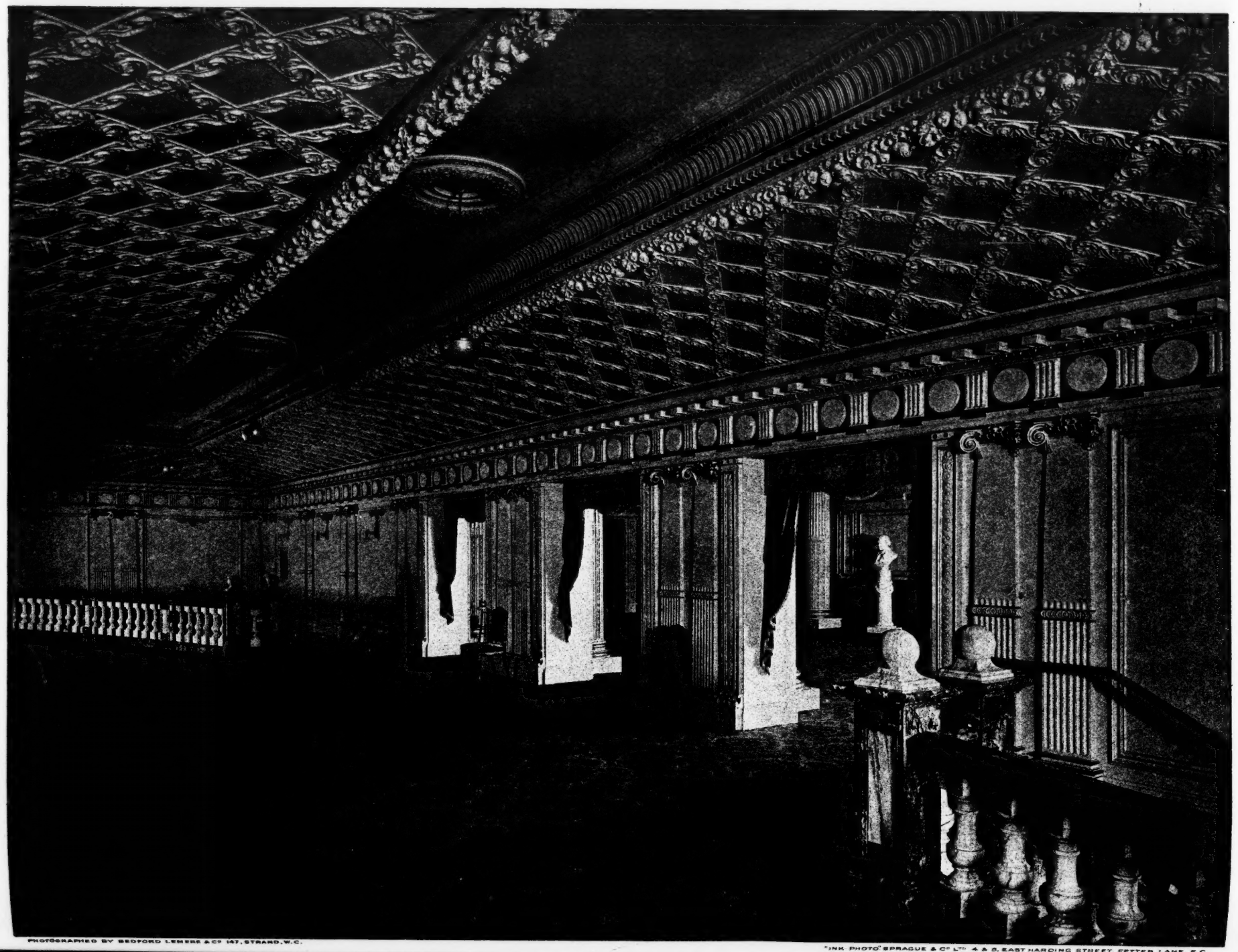

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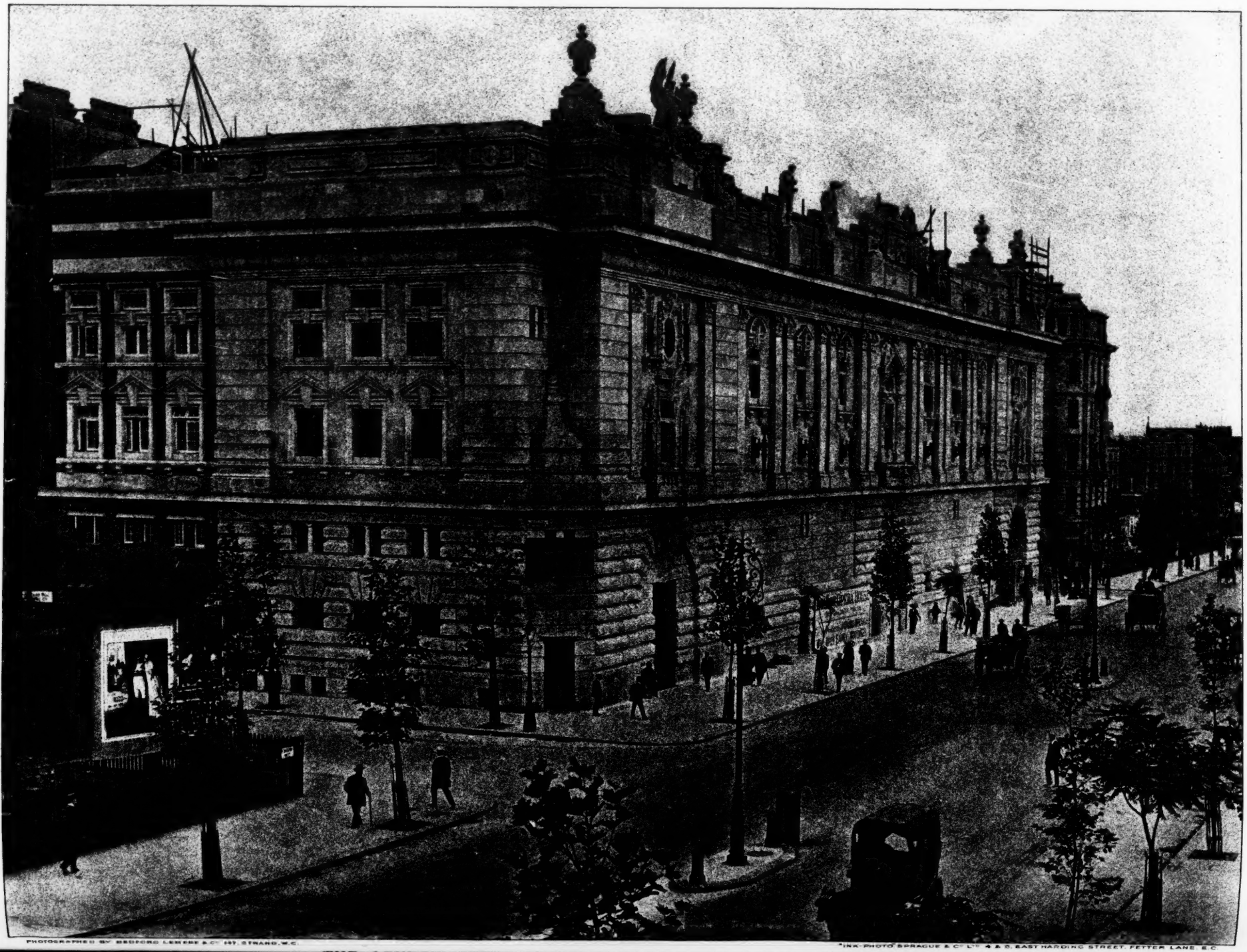

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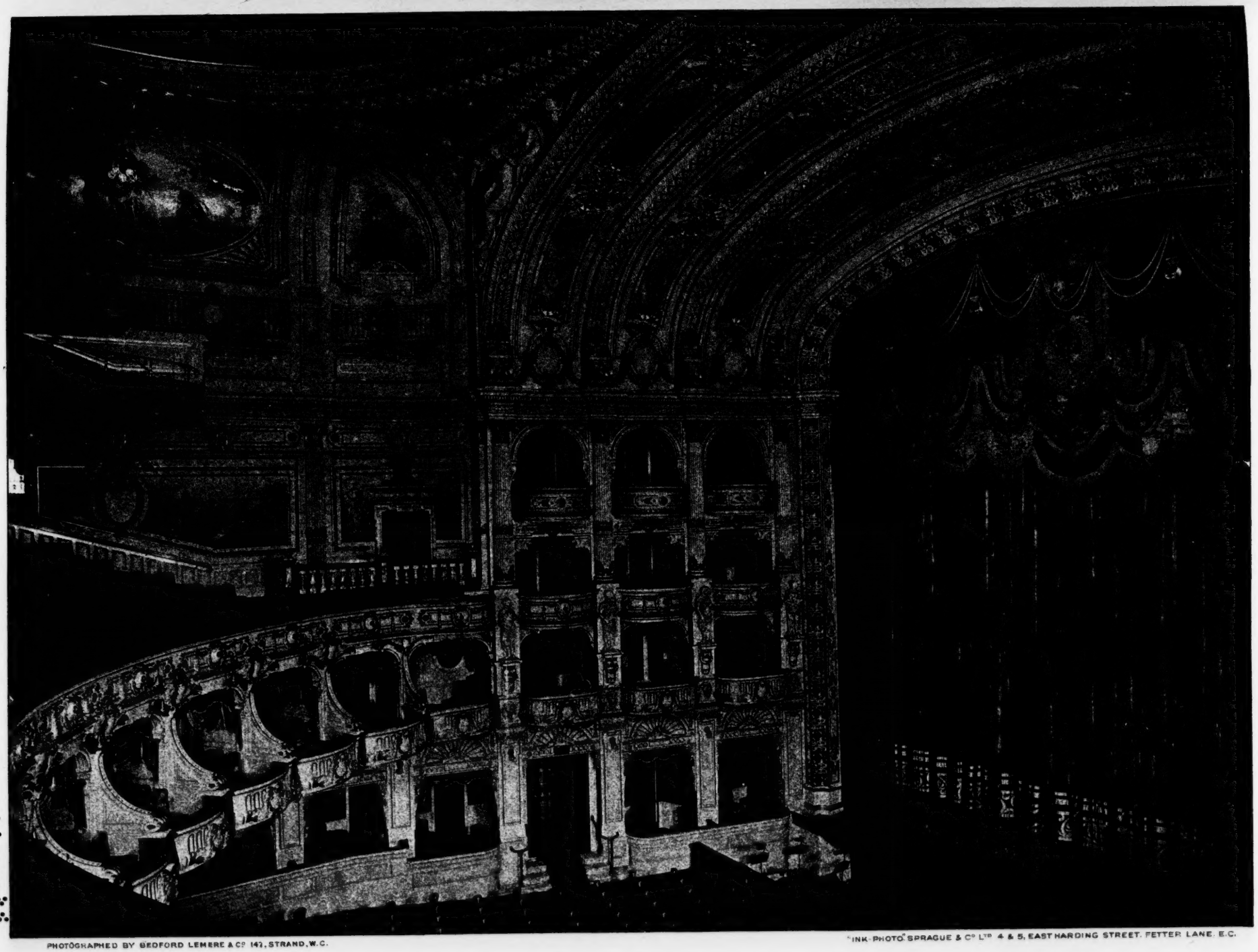

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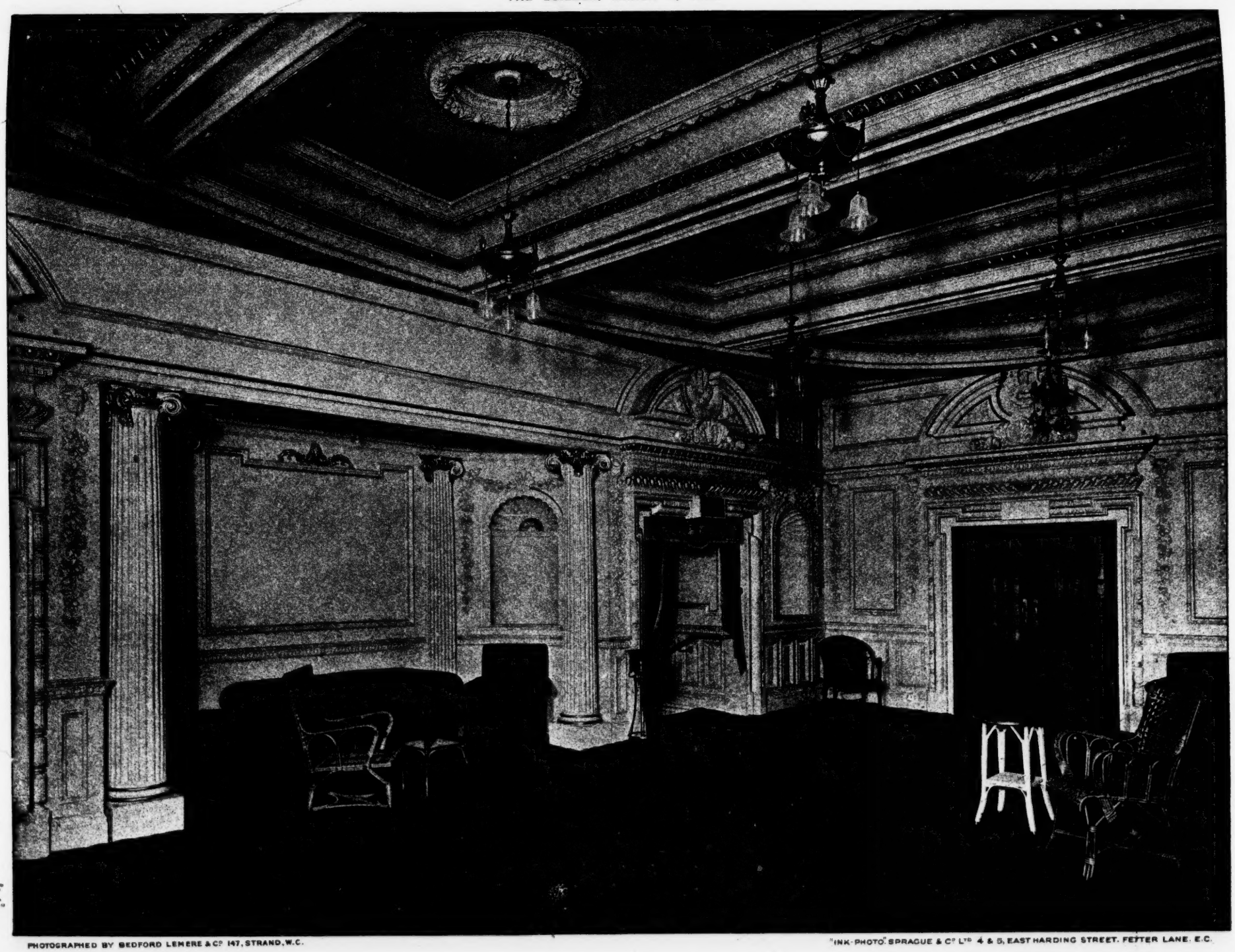
THE LONDON OPERA HOUSE, KINGSWAY.—Mr. Bertie Crewe, Architect.



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